Textile Industries

Formerly "COTTON"

A W. R. C. Smith Publication

OCTOBER, 1953

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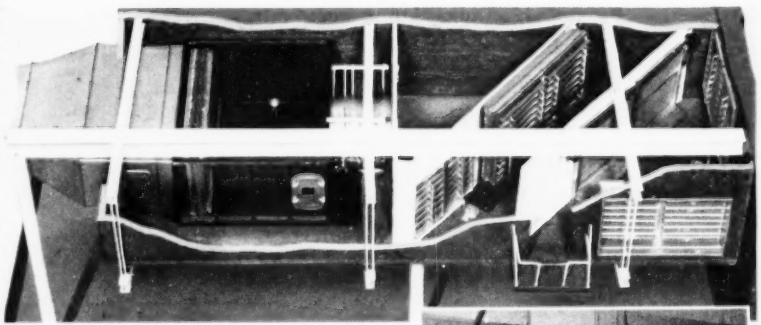
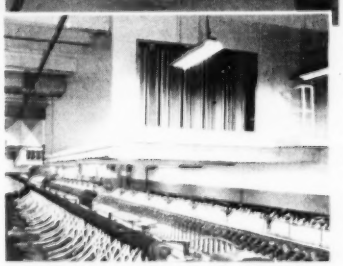
BORDEN MILLS PLANT
AIR CONDITIONED BY BAHNSON!



Typical design of the 28 Centrispray Stations. Nearly 2,000 tons of refrigeration are required

Centrispray Washers handle over a million cubic feet of air per minute for Humidity and Temperature Control



Suspended Centrispray Station in Roving Room, leaving floor clear for regular mill operations

● The mammoth 4-story Kingsport plant of Borden Mills presented many technical problems—yet Bahnson Engineers had the know-how that delivered the answers. The biggest problem—apparatus space—was solved by suspending many of the light, efficient Centrispray Washers, and by locating others in the existing monitor. This eliminated the need for expensive apparatus houses.

Air-conditioning equipment, for this most modern complete system in the Textile Industry, was *designed, manufactured* and *installed* by Bahnson—leader in textile air conditioning.

● Get the full story of the Centrispray Air Washer for modern textile air conditioning. Write for Catalog 22A.

91 OF THE TOP 100

Of the 100 top textile firms in the nation, 91 are users of Bahnson equipment.

Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

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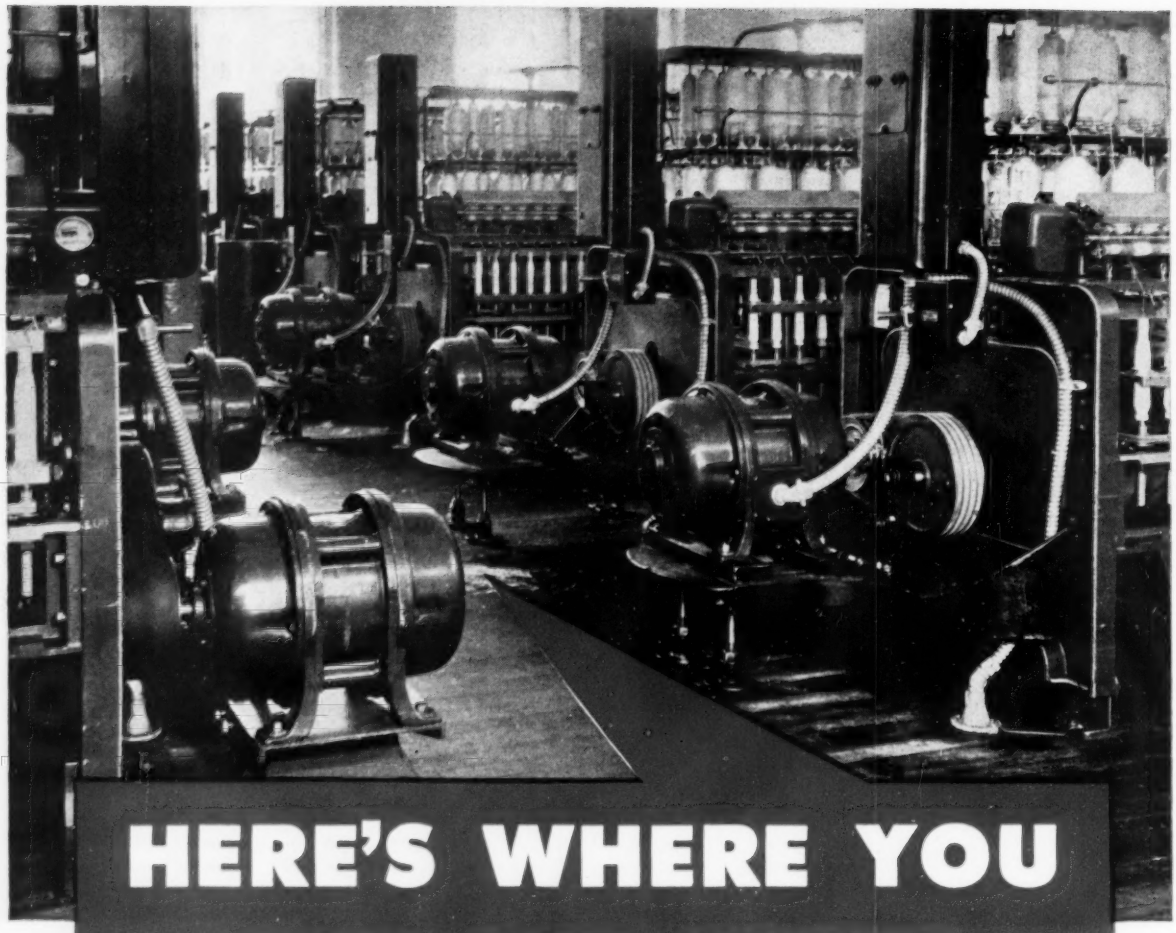

HERE'S WHERE YOU CAN CUT COSTS

HERE'S HOW you can do it: Use *Texaco Regal Starfak* in your high-speed, grease-lubricated ball and roller bearings. You'll reduce: 1) your maintenance costs; 2) your power costs; and 3) your lubrication costs.

Premium-quality *Texaco Regal Starfak* is way ahead of ordinary grease. It has greater oxidation resistance. It won't form gum, nor will it separate. *Texaco Regal Starfak* stays *in* the bearings, giving top protection under the toughest working conditions. Naturally, bearings last longer . . . maintenance costs come down.

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TEXACO

TEXACO Lubricants

FOR THE TEXTILE INDUSTRY

NBP ABC CCA

Textile Industries

Formerly "COTTON"

Vol. 117, No. 10
October, 1953

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TEXTILE PAPER PRODUCTS, INC.

Cedartown, Georgia — Telephone 1500

Prompt delivery by our own trucks throughout the South

Shorts and Remnants

"No sales," quoth he
"No sales?" asked I
"No sales," he said and heaved a sigh.

"Advertise?" asks I
"Advertise?" he says, "but why?"

"To tell the mill men what you've got
To show them that your product's hot
To tell them that your gimmick's not
Another gimmick gone to pot;
Believe me, sir, that means a lot"
Says I - - -
"Give it one more college try."

He did,
And not to our surprise
When he began to advertise
His dollar sales began to rise;
He's up in money
To his eyes.

He blesses the day he chose to buy
A 12-time schedule in TI!

. . . Naturally.

► Precedent requires that S&R devote two column inches to a commercial. Believing it wise to get the above out of the way as quickly as possible, we put it first. Besides, TI's Poet Laureate suffered an attack of vertigo and the MD's suggested that we humor him. Publication of his poem ends our humoring until next month.

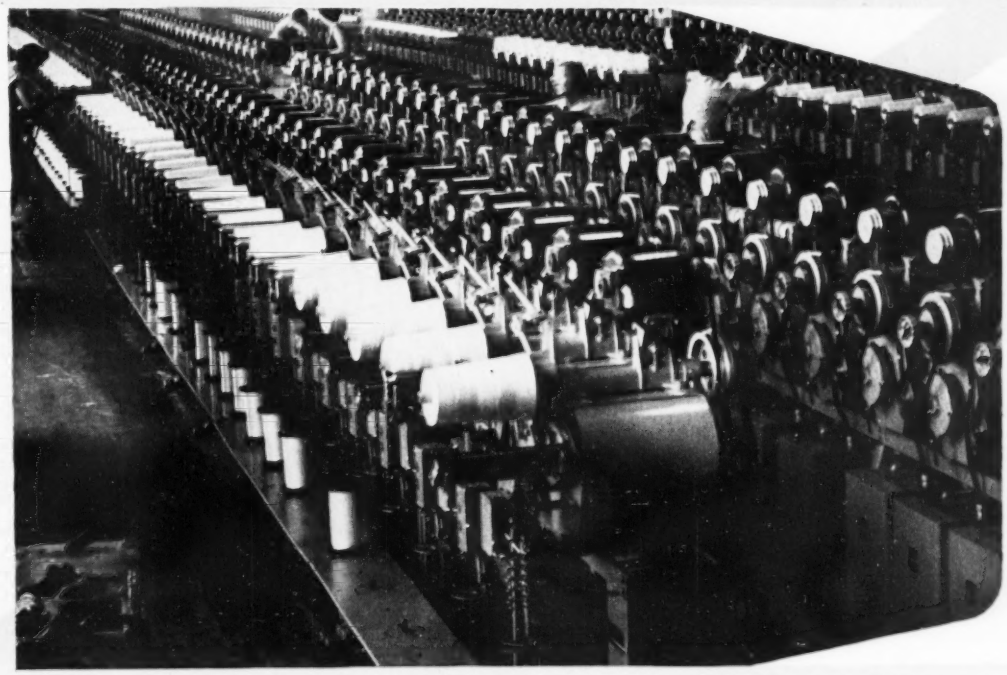
► Following the ruckus on the raised hemline for ladies' skirts, comes another authority's notice that men's trousers will go along with the trend—no longer will they appear to be held up by the shoe tops. Trousers may go to floating power, but men's eyes will follow the ladies' hemlines.

► Styles don't get ahead of research for King Cotton. The Southern Regional Research Lab has been working on the measurements of magnetic anisotropies of cellulosic fibers and finds them promising.

► This is a promising trend too. A man writes that although so-and-so is a competitor of his, he has the highest respect for the competitor's work in the field and the developments and research said competitor has undertaken. No mention was made of declining orders from research-minded competitor's customers.

► One of our good woolen mill friends writes that he has received his regular monthly issue but finds himself in need of an extra copy for some special reasons. Extra copies of TI get away quickly, but where we can serve special folks (all TI readers

FOSTER MODEL 78 PRECISION WINDER



. . . MAKES GOOD ON THE JOB

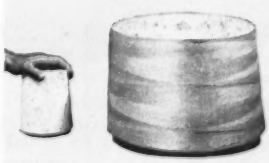
THE FOSTER MODEL 78 was designed for heavy duty work and is shown here winding rayon tire cord in a well known southern mill. This installation of 575 spindles is eminently successful, living up to all the claims made for it.

The features which contribute to its success are as follows :

1. Produces 10" traverse cones or tubes weighing up to 51 lbs.
2. Individually motor driven spindles with push-button electronic slow start and spindle brake.
3. Electric stop motion, with calibrated scale, assures accurate and uniform package size.
4. Has no clutches or idler pulleys. Long drive belts are eliminated.
5. Spindles are ball bearing mounted.
6. Easily positioned single weight adjusts pressure and pressure release mechanism.

To meet YOUR requirements this machine may be equipped to wind traverses from 6" to 10" and diameters up to 16" and to draw overend from bobbins, or from swifts, reels or unrolling devices; also with positive, gear driven gainer attachment or belt gainer which is easily adjusted for various yarn sizes.

Bulletin A-98A tells more • Write for it • No obligations



Model 78 cone compared with a standard 6" traverse cone

FOSTER MACHINE COMPANY

WESTFIELD, MASS., U.S.A.

Southern Office: Johnston Building, Charlotte, N. C. • *Canadian Representative:* Ross Whitehead and Co. Ltd., 1475 Mountain Street, Montreal, Que. • *European Representative:* Muschamp Taylor, Ltd., Ashton-Under-Lyne, England.

DAYCO COTS with amazing new discovery, IBROCOL, *successfully combat eyebrowing!*

Thanks to a new synthetic rubber blend containing the amazing ingredient, Ibrocol, Dayton Rubber research has been able to develop an entirely new and different Dayco Cot — EW-465 — that successfully combats eyebrowing. Actual mill tests run on many frames prove this, and also that it drafts better yarn, requires fewer cleanings of the clearer boards, and runs longer between buffings than any other cot.

The addition of Ibrocol is the chief reason for this remarkable performance. Its chemical and mechanical action gives the cot a surface that maintains just the right coefficient of friction to remove only the short staple fibers and transfer them well back under the clearer board. Long staple fibers that could build up into eyebrows are left in the yarn. Hence there is less waste as well as less eyebrowing.

There's another big advantage too. The Ibrocol in the new Dayco Cot retards slicking and glazing. Thus the surface retains its coefficient of friction longer than any other synthetic cot. This means fewer buffings, greater savings.

In addition to its special features, the new EW-465 Dayco Cot also gives you all the other famous Dayco Cot advantages. They're unaffected by moisture or changes in temperature. Neither do they groove, pit, or develop flat spots. As a result of these many features, Daycos give you fewer ends down, less lap ups, less eyebrowing, better drafting on all types of frames using either natural or synthetic fibers.

Whether you want to overcome eyebrowing or any other cot problem, you'll find that Dayco Cots are the right answer to help you secure the highest quality production at the lowest possible cost. For the whole story, get in touch with your Dayco Representative today.

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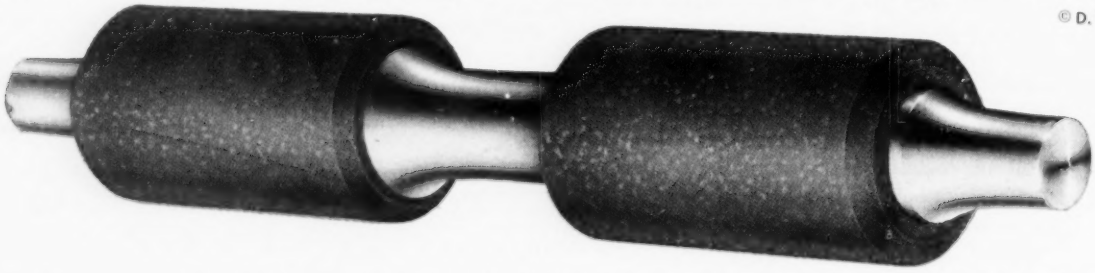


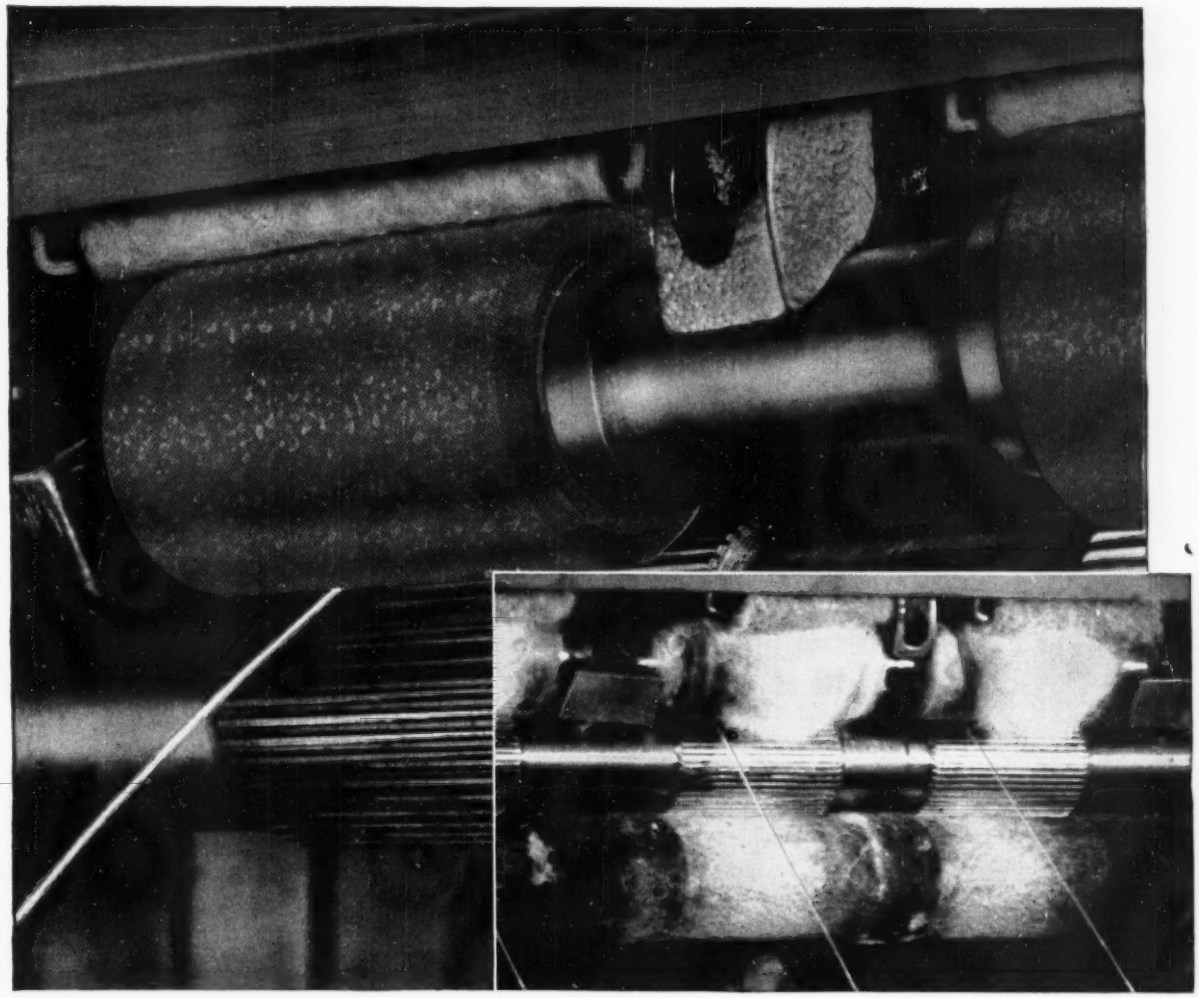
According to actual mill tests, this new Dayco Cot with IBROCOL successfully combats eyebrowing, drafts better yarn, and runs longer between buffings.

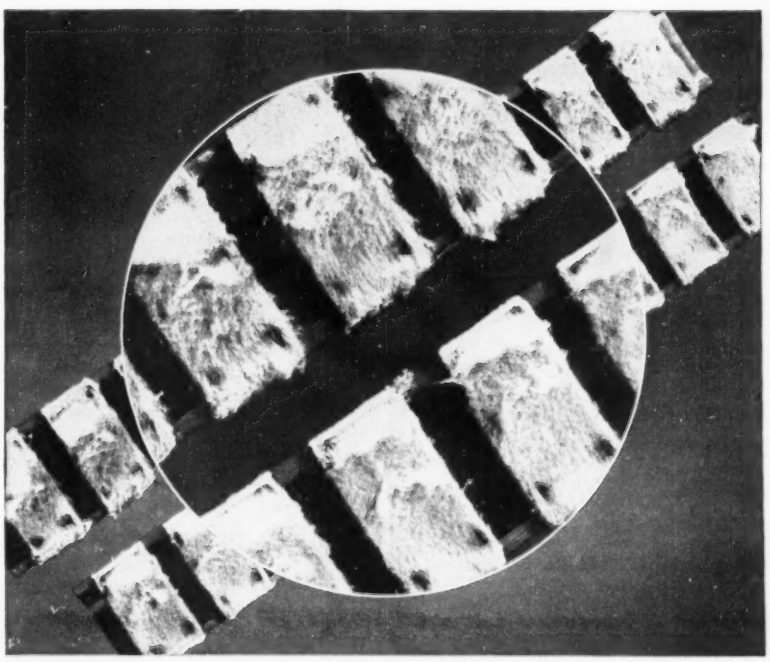
Dayton Rubber

Since 1905

Textile Products for Better Spinning and Weaving

DAYTON RUBBER CO., TEXTILE DIVISION, WOODSIDE BUILDING, GREENVILLE, S. C.





Compare the non-eyebrowing performance of these new EW-465 Dayco Cots shown above in the large illustration, with the condition of another make, shown in the inset. You immediately see why mills who have tried the new Dayco Cots are so enthusiastic. An accurate check in a great many mills over a period up to one year showed that the new Dayco EW-465 Cot did not eyebrow while other cots did.

The clearer board on the top came from a stand of new EW-465 Dayco Cots. These cots were run on the frame exactly the same length of time as the bottom clearer board taken from an adjacent stand of different make cots. Note the difference in the clearer waste. This is because the Dayco's remove only short staple fibres, packing them well back under the clearer board away from possible pickup by the end.

Another G&K First!

SPIN-TEX®

Spindle Bumper Strap

NOW *Preform-mounted...*

you just slide it onto the spindle

Now in a matter of seconds you can install a spindle bumper strap on a Crompton & Knowles loom. No more pulling and hauling! The SPIN-TEX Spindle Bumper Strap is delivered to you *formed and mounted* on a hardwood dowel. Just slide it off the dowel and onto the spindle. It's ready to go to work.

And once on, you're all set for perfect cushioning of the drop-box picker. The strap rolls with the punches and comes back fast . . . 80 or more blows per minute, hour after hour, month after month. The leather is lively, resilient tough center-stock Hairitan® tannage . . . with tightly-woven fabric cemented between the leather plies.

Other G&K Spindle Bumper Straps are available in one, two and three ply, hair-on and hair-off, cemented, stitched, riveted with holes punched as desired. . . . Another example of how G&K Orange® Line of Textile Leathers has been painstakingly developed to meet your special needs. Order through your Distributor.

FREE CATALOG
presents the complete Orange Line of Textile Leathers for weaving on Draper and Crompton & Knowles Looms—also Aprons and Tapes.

Pickmaster® Pickers do not bounce the shuttle, or cause the shuttle spur to heat up. Assure smooth shuttle flight and accurate boxing.

Condenser Tapes, Comb and Gill Box Aprons, and Grakorub Rub Roll Aprons are producing uniform rovings with less down-time. Made of selected G&K leather specially tanned and accurately fabricated in standard and special sizes.

Boxmaster Binder and Box Plate Leathers of special HAIRITAN® Leather with smooth, catch-free edges and deep, velvety surface. Need no waxes or fillers — do not bleed and discolor the filling yarn.

G&K Orange® Line Loom Leathers

1. STOP KINKY FILLING (No shuttle bounce)
2. REDUCE BANG-OFF (Perfect boxing)
3. CUT SHUTTLE COST (No hot spurs)
4. INCREASE PROFITS

MEMO: If your problem is power transmission, see your G&K Belting Distributor for:

HEART OAK® **top grade oak tannage**
RESEARCH® **premium quality special tannage**
SPARTAN® **combination tannage: resists moisture, fumes**

WRITE FOR FREE BELTING MANUAL 101

GRATON AND KNIGHT®

GRATON & KNIGHT COMPANY
Established 1851
Worcester 4, Mass.

DIXIE LEATHER CORPORATION

DIXIE LEATHER CORPORATION
Graton & Knight Company Affiliate
Albany, Georgia

T-5

Shorts and Remnants

are extra special) for special reasons with special copies, 'tis a pleasure.

► But sometimes it's impossible to serve with complete issues six years old, as another wool mill requested. Clip sheets of some articles may be available. We suggest retaining copies; never know when some technical article of little interest now will be needed when a customer asks for a different style. And customers, like secretaries, have strange habits.

► Such as the habit of our secretary of coining words which appear for the first time in a business letter. Take the word "prossom," for instance. Not that it isn't a very good word, but we couldn't find it in the dictionary and doubted that our reader could fetch an interpretation. Confidentially, we think she's developed a new textile device called a "prossom" and is just holding out on us.

► New words remind us that the Marines have a saying that there's always someone who "doesn't get the word." An occasional S&R reader also fails to get it—that a paragraph or so might not be serious. Special copies now go to those readers with facetious statements marked in red ink.

► Ducks and chickens may be in the red too. A new pillow has 100% Dacron fiber filling, which lab tests show comparable to or better than the down and feather mixtures ordinarily used. Easy to shape into restful positions, they're a boon to bed readers.

► From an engineer who works with a number of textile mills we have this word: "Incidentally and possibly of interest to you, I find from mill men [intelligent creatures] that your publication [brother, that's us] takes the top spot [prospective advertisers note] among all [repeat *all*] the textile [just textile?] publications . . . more mill men read it and say [they just say it because it's so] they get worthwhile information [sounds like us talking] from it [TI spelled backward is 'it']."

► A Canadian manufacturer referred to "an illustrated directory of a large part of the circular knitting machines on the market" which he had seen in "one of six publications"

NEW CALIBRADE WHEELS (VITRIFIED)

. . . make the

TABER ABRASER

the ideal

WEAR TESTER FOR TEXTILES

NEW TEXTILE WHEEL

The development of this new calibrade, nonresilient vitrified abrading wheel that will operate under 250 or 500 or 1000 gram load, makes the Taber Abraser perfect for the scientific wet or dry testing of textiles.

SIMPLE TO OPERATE, UNDERSTAND

With the Taber Abraser anyone can conduct a scientific wear test in your textile plant.

By developing four new types of calibrade, nonresilient vitrified abrading wheels the new Model 140 Taber Abraser is now the perfect instrument for scientifically testing all types of textiles, including upholstery and pile fabrics.

This simple to operate, but scientifically accurate piece of testing equipment will quickly compare the wear or abrasion resistance of your product with the product or products of anyone in your field. Test your new developments against any competitive fabric, and in a mere matter of minutes you will have an accurate wear report, showing in the numerical index on the face of the Taber Abraser.

From here on in competition will be getting more difficult, and it is up to you to take steps to protect your present sales volume. This inexpensive piece of test equipment will pay for itself many times over in savings it will create.

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For a completely illustrated, descriptive folder that will give you all the facts.

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SECTION 24
111 GOUNDRY STREET • NORTH TONAWANDA, NEW YORK

Without obligation, please send me your literature on the special Taber Abraser designed for testing textiles.

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COMPANY .....

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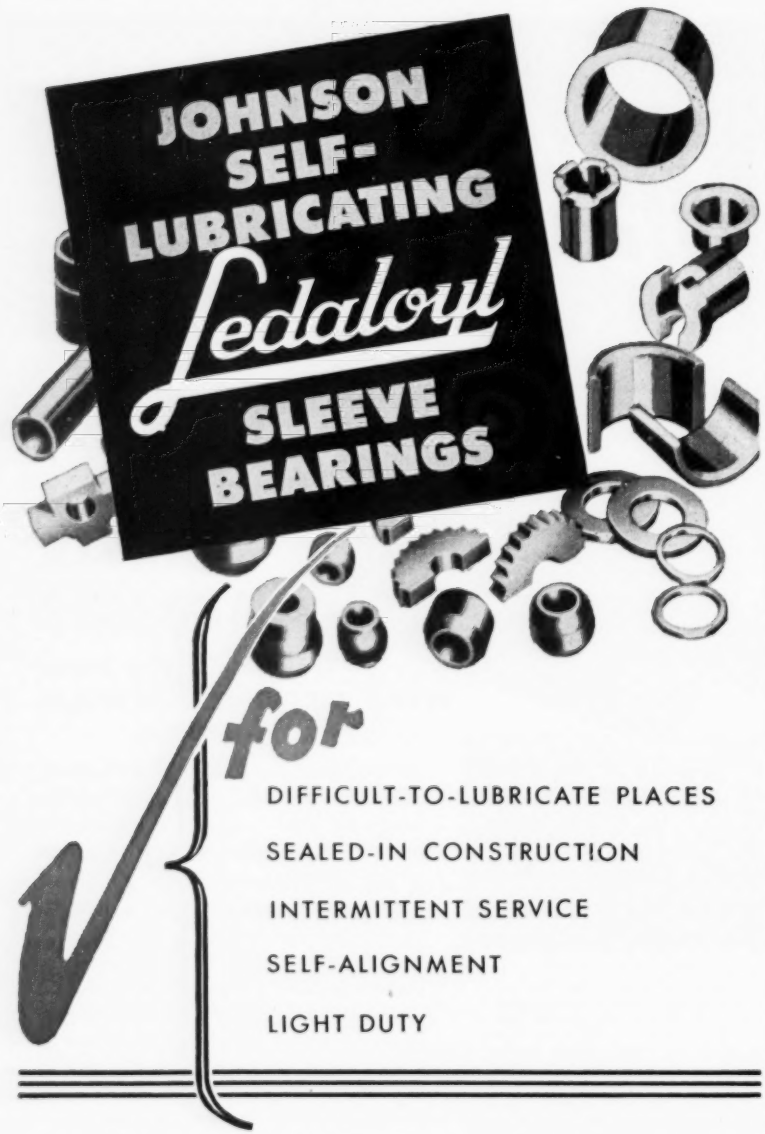
CITY ..... ZONE ..... STATE .....



POWDER METALLURGY made possible this versatile bearing . . . molded pre-cast bronze alloy powder impregnated with oil for self-lubrication. Myriads of tiny, evenly spaced pores serve as miniature oil wells. When the bearing is in use the oil is metered to the shaft . . . when at rest, the oil is reabsorbed by the bearing. These Ledaloyl bearings are widely used for small motors and fans, and have wide acceptance for self-aligning applications. Their extremely low cost, (no machining necessary), makes them practical for use in many types of equipment where heavy duty is not a factor. A wide selection of plain, single flanged, double flanged and self-aligning Ledaloyl bearings is available from distributors' stocks, while special sizes and styles of bearings and parts can be made to order. Write for complete information.

JOHNSON BRONZE CO., 530 South Mill St., New Castle, Pa.

JOHNSON B BEARINGS
Sleeve-Type

OTHER BEARING TYPES:
General Purpose (GP) • Electric Motor (EM) • Graphited • Universal Bronze Bars • Babbitt

Shorts and Remnants

and asked if 'twas TI and for clip sheet. 'Twas and we served. Which is a good time to remind readers to hold on to the Index of Articles which arrives unbound (for ease of filing) and probably falls out of each December issue. Pick the thing up from the floor and stuff it in a drawer; it will guide you to some technical dope just when you need it.

► William J. Rooke, president of W. R. C. Smith Publishing Company and formerly business manager of TI, just turned his 40th year with the company and is still going strong. At his speed he'll probably wind up 50 years by 1954. The fellows in the company did the celebrating—because every day they praise Allah that Bill Rooke is around. S&R can recall but one error of judgment in all those years—Bill missed the boat when he didn't fire Old S&R ages ago.

► This Month's Intelligence: Rubber check losses in the U. S. run as high as $300 million a year. The red-breasted sand-piper inhabits every continent on the globe. Tallest men were selected as foremen in early Scotland because it was believed they made the best leaders. The word "News" is formed from the first letters of North, East, West, and South. A watch ticks 157,680,000 times a year, unless it misses a tick. Between 80 and 90% of the top manufacturing executives used to be foremen. No one but an experienced ichthyologist can recognize the numerous races of lake herring. A textile mill was built in Alabama in 1815. TEXTILE INDUSTRIES (then "Cotton") was started in 1898.

Registered Behind Iron Curtain

" . . . beg you very much to send me two specimen copies of your journal under separate cover registered. . . "

Name Withheld
(Poland)

► We doubt that a red "registered" label will be honored by the Reds.

Football Players or Textile Engineers

" . . . just looked over your August number . . . very interesting . . . article 'Sell High School Graduates on Industry' . . . textile deans were recently the guests of Avondale Mills

No matter what you need to lower your score on cost-per-yard of the greatest yardage of saleable cloth, C&K has the right looms . . . for single or multi-color filling mixing fabrics . . . for cottons, wools, synthetics or blends.

C&K has the longest line of automatic filling mixing and call box looms in the world. So, for whatever "shot" you are about to play . . . *see C&K today.*

Mark this Date Now . . . April 26-30, 1954
AMERICAN TEXTILE MACHINERY EXHIBITION, ATLANTIC CITY

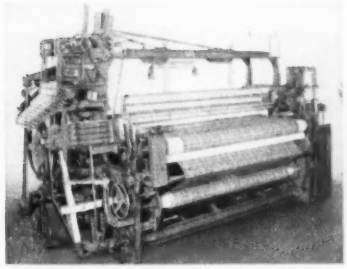
This "Invisible Trademark" Stands World's Finest Fabrics . . .

Back of the Trademarks of the which are **WOVEN** *Fabrics*

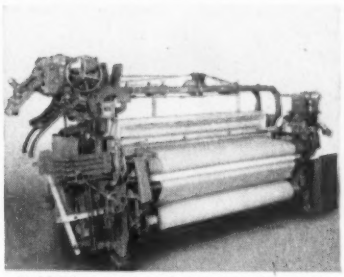
Crompton & Knowles LOOM WORKS

WORCESTER 1, MASSACHUSETTS, U. S. A.

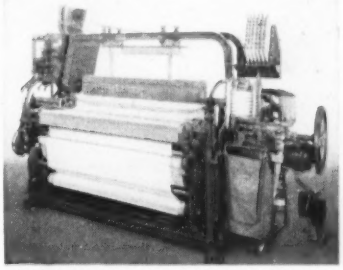
Philadelphia, Pa. • Charlotte, N. C. • Allentown, Pa. • Crompton & Knowles Jacquard & Supply Co., Pawtucket, R. I.



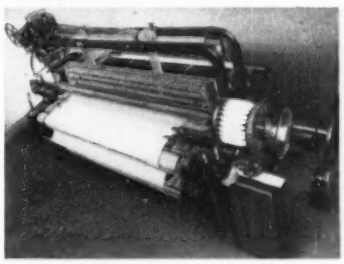
C LOOMS for widest flexibility in weaving cottons, spun rayons and blends for towels, blankets, decorative fabrics, bedspreads, handkerchiefs, shirtings, suitings, dress goods. Built in all widths . . . bobbin-changing . . . shuttle changing . . . convertible . . . tri-color . . . pick and pick . . . leno motions . . . all-purpose take-up . . . 30" beams . . . and many more C&K engineered advantages.



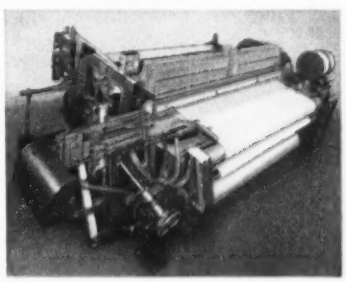
W LOOMS for unmatched versatility in weaving woolens, worsteds, upholstery and blended fabrics. Made in all widths . . . bobbin-changing . . . filling mixing . . . tri-color . . . convertible . . . pick and pick . . . and many other features.



S LOOMS are the most modern machines for weaving nylons, rayons, acetates, combinations and pure silks. Built in all widths . . . call box . . . filling mixing . . . bobbin-changing . . . shuttle changing . . . many shuttle sizes . . . pick and pick . . . Jacquard . . . and what other features do you want?



NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and Head Motion . . . one of the newest additions to C&K's complete line of performance-proved FM Looms.



NEW SINGLE-PURPOSE C&K 2 x 1 BOX FILLING MIXING LOOM equipped with Rotary Magazine and End Cam. C&K also builds multi-purpose FM Looms with Call Box Feature (see W, C and S Looms below).

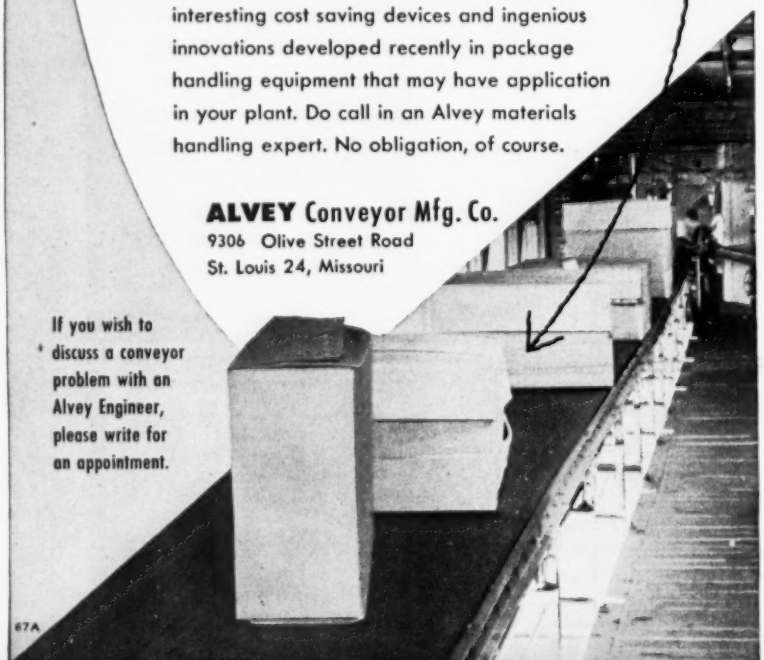
EVERYTIME YOU MANHANDLE A PACKAGE
YOU ADD TO THE COST OF YOUR PRODUCT
AND NOTHING TO THE VALUE

The answer is simple—
put your packages on conveyors—
put them on **ALVEY** Conveyors

An experienced Alvey Engineer is available to confer with your technical staff in reviewing your present conveyor system and package handling methods. There have been many interesting cost saving devices and ingenious innovations developed recently in package handling equipment that may have application in your plant. Do call in an Alvey materials handling expert. No obligation, of course.

ALVEY Conveyor Mfg. Co.
9306 Olive Street Road
St. Louis 24, Missouri

If you wish to discuss a conveyor problem with an Alvey Engineer, please write for an appointment.



67A

ALVEY

Shorts and Remnants

at one of their annual conventions . . . think the deans felt that the mills throughout this industry were not taking enough interest in directing to textile schools high school students in their communities . . . as one man put it, it looks like there is more interest in getting a good football player to go to a certain college. . . "

DONALD COMER
Chairman Executive Committee
Avondale Mills
Birmingham, Ala.

Weaving Synthetics Series

" . . . would it be possible for us to secure reprints . . . articles on 'Weaving Filament Synthetics' which have appeared in your magazine . . . "

ERNEST E. MORRIS
Division Supt.
Pepperell Mfg. Co.
Fall River, Mass.

► The fifth and last article in the series begins on page 160 this issue; reprints will be made available.

Unionism Blessings?

" . . . if reprints of 'So You Don't Want a Union' and 'The Blessings (?) of Unionism' are available, we would like to have 50 copies. . . "

SUPERINTENDENT

► Both articles, from March and July TI, were reprinted in quantity, and in quantity the mills asked for them; an additional run has been made so that again we can share our many blessings.

Not Too Late!

" . . . please send us 25 reprints of 'It's Not Too Late' by Capt. Eddie Rickenbacker . . . one of the finest and most inspiring articles I have ever read. . . "

W. H. BEATTIE
President
Woodside Mills
Greenville, S. C.

" . . . appreciate . . . 20 copies of 'It's Not Too Late' . . ."

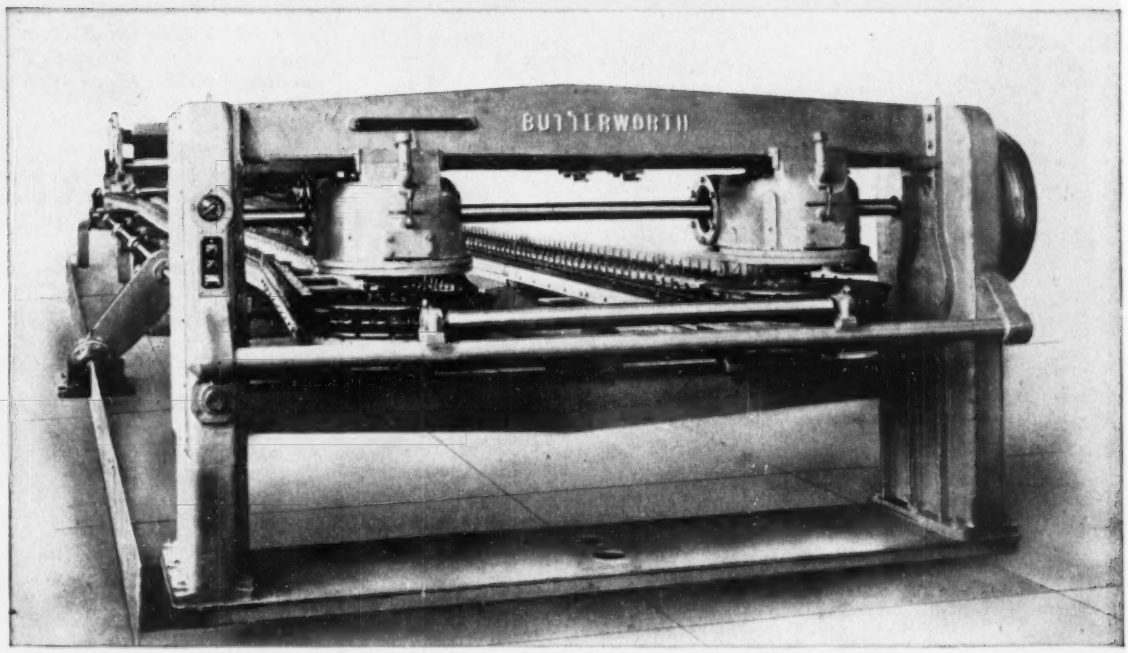
FREDERICK B. DENT
Mayfair Mills
Arcadia, S. C.

" . . . would like very much to reprint 'It's Not Too Late' by Captain Rickenbacker. . . "

M. S. STILLWELL
Associate Editor
The Quartermaster Review
Washington, D. C.

► Only a few of many requests. Reprints available.

Don't Sacrifice Mercerizing Speed To Gain Uniform Tension!



Butterworth Mercerizing Tenter, with overhead drive, for high-speed, uniform tension.

Butterworth Mercerizing Tenters provide speeds up to 100 yards per minute, with a maximum width of cloth maintained throughout the run.

Width control and precision indicators for speed give uniform tension on the goods. Help to eliminate one of the causes of cloudy dyeing.

Extra large sprockets and chain openers cut wear on chain and nippers. Heavy-duty overhead drive operates smoothly, powerfully, quietly. Horsepower requirements are lower. And Butterworth builds the same high efficiency into a complete range of mercerizing equipment — mangles, tenters, washers.

For quick starting, controlled high speeds, uniform tension and reduced maintenance, let a Butterworth engineer give you all the details on the Butterworth Mercerizing Tenter. Or ask us about chainless mercerizing machines for very sheer fabrics.

H. W. BUTTERWORTH & SONS CO.
Bethayres, Pennsylvania

1211 Johnston Building, Charlotte, North Carolina
187 Westminster Street, Providence, Rhode Island

Machines for Bleaching, Boiling-Out, Dyeing, Mercerizing, Finishing and Embossing : : Pot Spinning Machines for Synthetic Fibers : : Calender Rolls : : Tenter Chains

BUTTERWORTH

Sometimes it's a "FAMILY AFFAIR"

Though they all come from the same house . . . one may be a lawyer, another a doctor, a business executive, and a scientist. When each is a success individually, the whole *family* has a reputation for success.

The world-wide reputation of the house of Anheuser-Busch is like that . . . built by all of its divisions and departments, though each is a specialist in its own right.

The Corn Products Department of Anheuser-Busch is such a specialist . . . with special people and special products devoted entirely to the needs of the Textile Industry. Its technical staff has had notable success in solving problems for textile manufacturers; its advice and facilities are yours for the asking, without obligation.

Making friends . . . through performance and service . . . has been the *business* of Anheuser-Busch for more than a century.

CORN STARCHES
DEXTRINES
CORN SYRUPS
GUMS

Phone or write:

ANHEUSER-BUSCH, INC.
CORN PRODUCTS DEPARTMENT

ST. LOUIS, MO.
721 PESTALOZZI

CHARLOTTE, N. C.
1112 JOHNSTON BLDG.

NEW YORK, N. Y.
33rd & 12th Ave.

Personal NOTES
ABOUT MEN YOU KNOW

Frederic A. Cornell, resident manager of Collins & Aikman Corp. plants in Bristol, R. I., is the new president of the Rhode Island Textile Association.

Stanley Herlin, with the organization since 1940, has been named president and general manager of Ripon (Wis.) Knitting Works.

Alex Walker has joined Susquehanna Mills, Inc., Sunbury, Pa., as a special consultant on men's and women's wear fabrics. He was formerly with Botany Mills, Inc.

Miss Sada Nell Williams, formerly with the W. R. C. Smith Publishing Co., has joined the Tufted Textile Manufacturers Assn., Dalton, Ga., as director of publicity.

New overseer of dyeing at the Trion, Ga., division of Riegel Textile Corp. is **Valentine Winkleman, Jr.,** previously assistant overseer. **David Miller, Jr.,** chief engineer, with headquarters in the New York offices of the firm, was recently awarded a Sloan Fellowship for participation in the Executive Development Program at the Massachusetts Institute of Technology.

Brig. Gen. Letcher O. Grice, after 42 years of service in textile and apparel sections of the Quartermaster Corp., has retired.

William O. Allison has been appointed controller of Reeves Brothers, Inc.

C. E. Carpenter, formerly yarn superintendent at Amoskeag-Lawrence Mills, is now in charge of carding and drawing at the American Silk Spinning Co., Providence, R. I. Overseer of spinning at this mill is **Alfred J. Maino,** who was with the Berkeley Mill of Lonsdale Co. until its liquidation.

Herbert J. Sherertz, formerly a technician in the quality control department of Burlington Mills, has joined the American Viscose Corp. as assistant textile research represen-

A time-proven formula of interest to executives

top gauges *equal* top quality

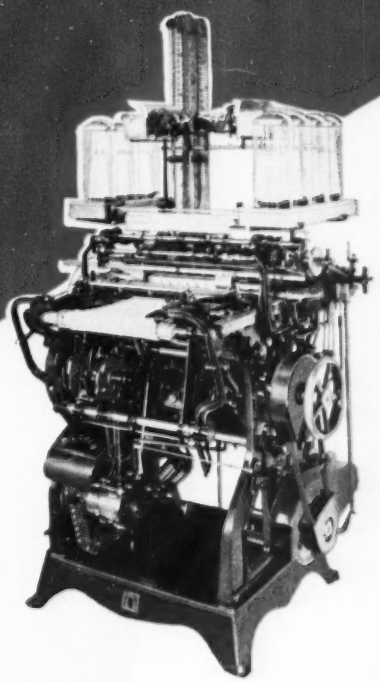
when it's a Wildman Full Fashioned Hosiery Machine

The consumers' demand for top quality hosiery — hosiery with the height of elasticity, beauty, wear — makes the highest gauges the top sellers today.

This top quality is the total of several features they seek. For instance, in the 75 gauge, the same size yarn is used as in the lower gauges, but naturally it is tighter knit. The resulting elasticity determines the comfort, the fit, the pleasure the owner gets from her stockings — and eventually the wear. The 75 gauge will give her these features and it is longer wearing, more resistant to snagging.

Yes, your highest gauges are your market today, and the consumer must be educated to their superior qualities . . . Your assurance of maintaining this top quality in your production is the WILDMAN 75 gauge Full Fashioned Hosiery Machine, because it is time-proven to be an economical, efficient, high production machine — automatic in operation. Inquire today for complete details.

75 gauge

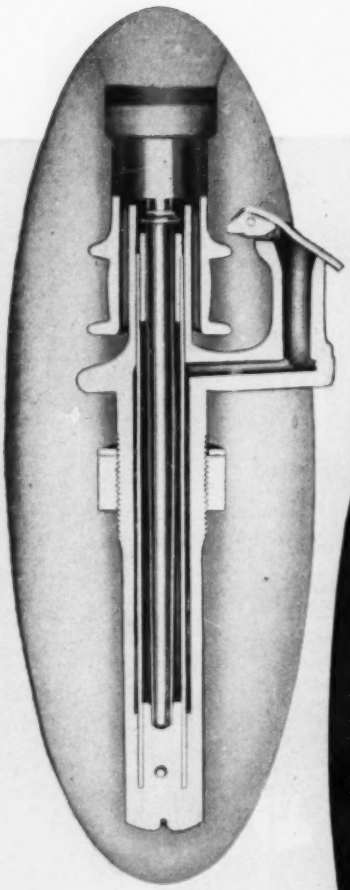


WILDMAN
MFG. CO., NORRISTOWN, PA.

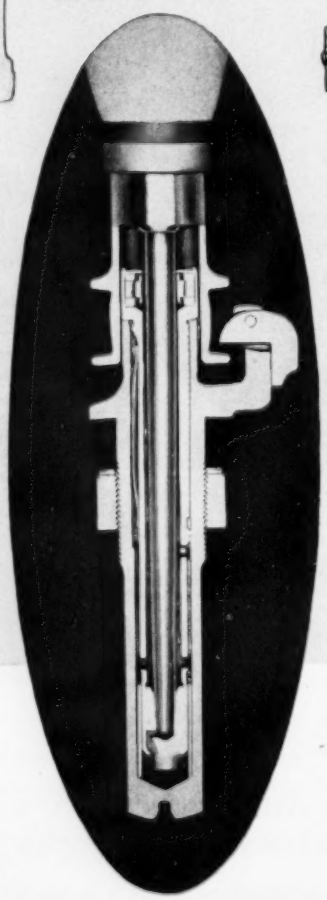
MANUFACTURERS OF: FULL FASHIONED HOSIERY MACHINES; CIRCULAR MACHINES FOR OUTERWEAR, UNDERWEAR, SPORTSWEAR, TRIMMINGS; STOP MOTIONS

You can reduce spinning costs

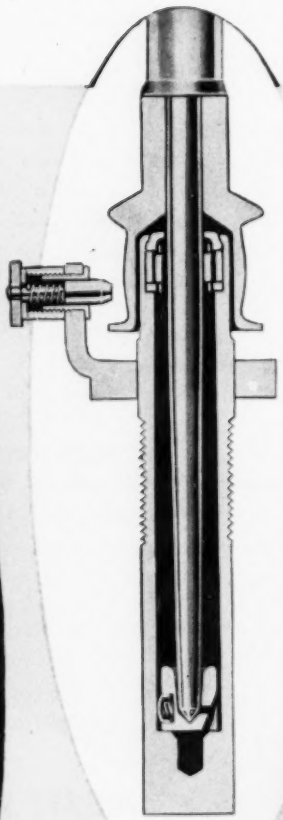
with Gulfspin, the only spindle oil that



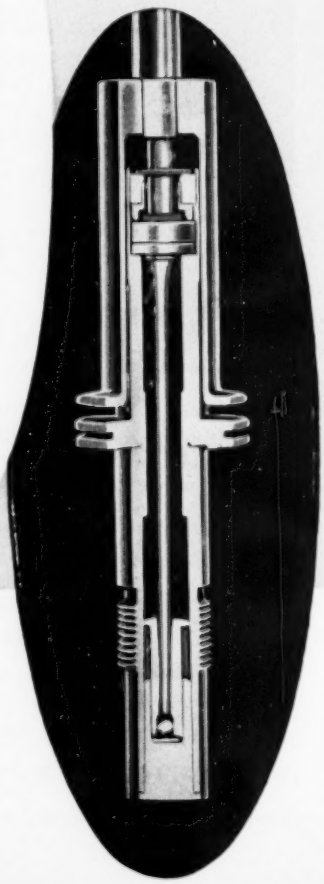
Spindle with sleeve-type bearing. Because it will not thicken in service, Gulfspin keeps power consumption low.



Spindle with roller bearing. Gulfspin prevents rusting and wear, reduces ends down.



Spindle with spring-type vibration dampening device. Absence of sludge with Gulfspin insures proper dampening at all times.



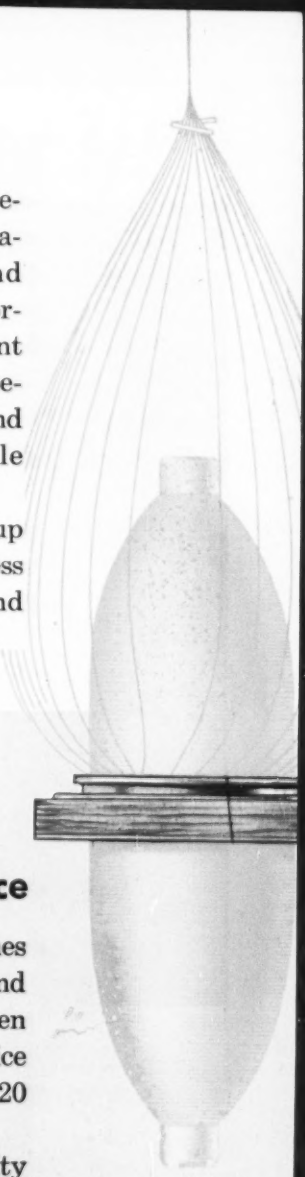
Sealed spindle with roller bearing at top and plain foot-step bearing. Gulfspin's high resistance to oxidation and deterioration makes it ideal for this application.

1 Keeps spindles and bolsters clean . . . no deposits of any kind

Gulfspin works three ways to keep spindles absolutely clean. First, it has the inherent ability to resist sludge formation—it's oxidation stabilized. Second, Gulfspin prevents sludge and other fine contaminants from depositing on spindle parts. Third, Gulfspin provides effective protection against rust, especially important in cast-iron bolsters where rusting causes bolster wear and discoloration of the lubricant.

Because there are no sludge deposits with Gulfspin, spindle vibration is kept to a minimum and dampening devices function normally. Gulfspin also has excellent oiliness characteristics, which materially reduce the rate of wear and prevent enlargement of spindle clearances.

This kind of performance adds up to smooth spindle performance, less vibration, fewer ends down, and rock-bottom maintenance costs.



2 Prevents any increase in power consumption . . . does not thicken in service

When we remember that spinning frames may consume as much as 60% of the total power used by a textile mill, it is evident that appreciable savings in power consumption here are worth while.

For spindle lubrication, equipment manufacturers and lubricant suppliers recommend oils of low viscosity which will have the necessary film-forming properties and dampening effects. But what if this carefully selected viscosity increases appreciably in service when it comes in contact with dirt, lint, water, and oxygen? Ordinary spindle oils often thicken after a few months' service and a viscosity increase of 10 to 20 Saybolt Seconds may result.

Such an increase in oil viscosity results in a power increase of about 1 watt per spindle, 200 watts per frame, 20,000 watts per 100 frames! Converted to dollars and cents, this might total a substantial sum.

Save on power with Gulfspin!

GULF INDUSTRIAL LUBRICATION

Gulf Oil Corporation · Gulf Refining Company
1934 Gulf Building, Pittsburgh 30, Pa. TI

Please send me, without obligation, a copy of your pamphlet entitled "Gulfspin."

Name .....

Company .....

Title .....

Address .....

LOW COST MAINTENANCE

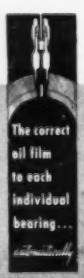
with **BIJUR**

The new Whitin "F3" features large packages — for greatly increased doffing cycle — result, *lower labor and winding costs.*

Bijur automatic lubrication on the Whitin Spinning Frame meters just the right amount of oil at the right time to all head end bearings while the frame is running—result, *lower operating and maintenance costs.*

Specify Bijur lubrication on all new mill equipment you buy — result, *longer machine life, low maintenance, increased production.*

A Bijur engineer can solve your lubricating problems on all textile machinery.



N-5

BIJUR

LUBRICATING CORPORATION

Rochelle Park • New Jersey

Pioneers in Automatic Lubrication

280

Personal NOTES ABOUT MEN YOU KNOW

tative in the acetate plant at Meadville, Pa.

John Lodge, II, has been appointed superintendent of the American Woolen Co.'s Tifton, Ga., plant. He was previously with Webster Mills.

William R. Moorehouse has resigned as treasurer of the American Association of Textile Chemists and Colorists, an office he held for twenty years.

Frank Besse, overseer of dressing at the Geneva Mill of the Wanskuck Co. until it was liquidated, is now with Bachmann Uxbridge Worsted Corp.'s Talladega, Ala., plant.

Allan W. Taylor, previously with United States Finishing Co., has joined Robbins Mills, Inc., as manager of the firm's Clarksville (Va.) Dyeing & Finishing Plant.

W. Lane Verlenden was elected to succeed his father, J. S. Verlenden, as a member of the board of directors of Standard-Coosa-Thatcher Co. The elder Mr. Verlenden has been ill for some time.

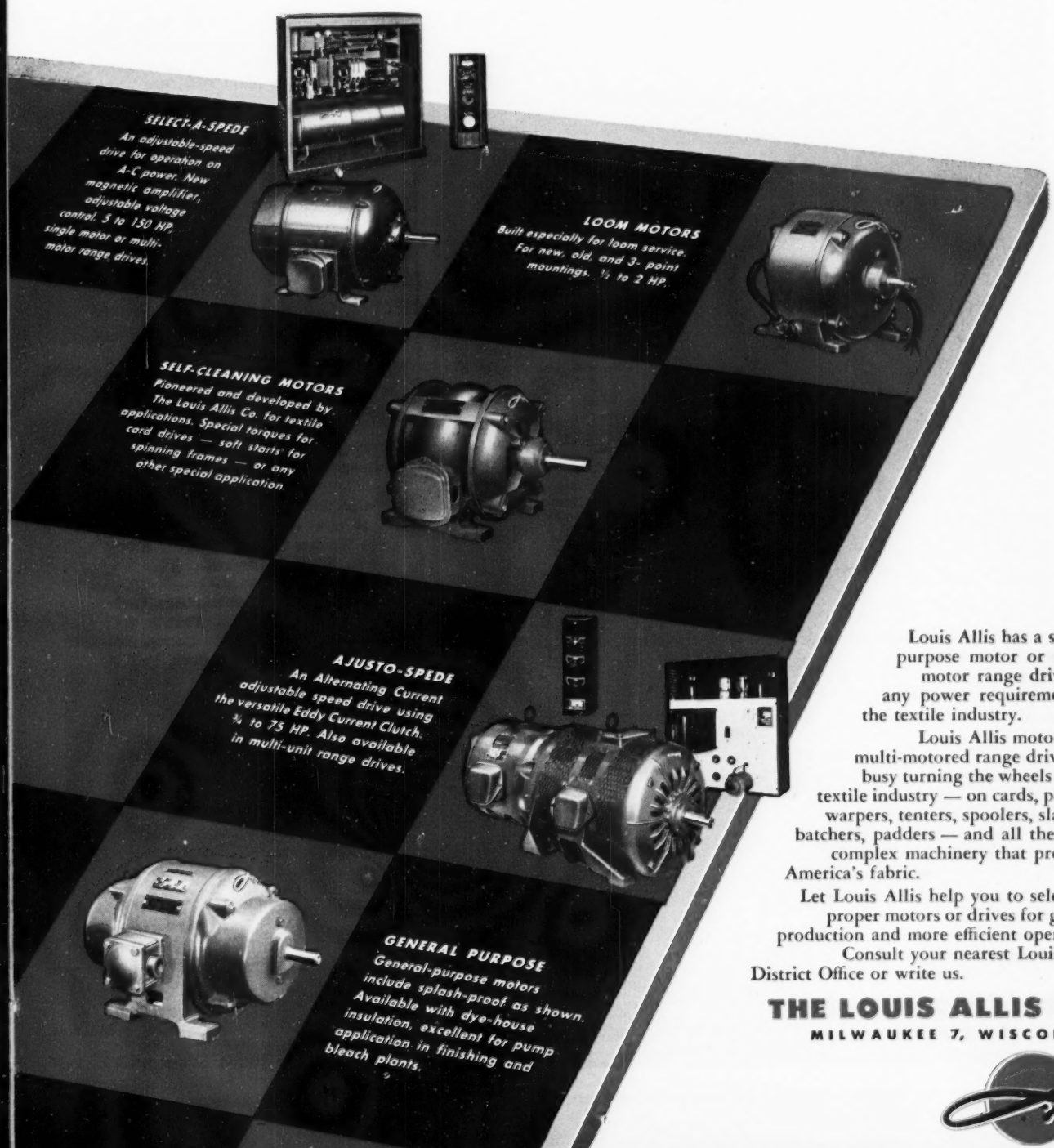
Richard Cook, formerly superintendent of Crown Manufacturing Co., is now doing free lance textile engineering work.

The Crompton-Richmond Co. has named **Rosalind Allan** fashion director and assistant to the president in advertising, publicity, and promotion.

New officers of the Southeastern Section, AATCC, are: chairman, **T. Howard McCamy** of Pepperell Mfg. Co., Lindale, Ga.; vice-chairman, **William B. Griffin,** Dexter Chemical Corp., Atlanta, Ga.; secretary, **John C. Cook,** TEXTILE INDUSTRIES, Atlanta, Ga.; treasurer, **James W. Swiney,** Fulton Bag & Cotton Mills, Atlanta, Ga. Sectional committeemen are: **David Merriweather,** Seydel-Woolley & Co., Atlanta, Ga.; **W. O. Bozeman,** Russell Mfg. Co., Alexander City, Ala.; **R. W. Freeze,** American Aniline Products, Inc., Chattanooga, Tenn.; and **Robert B. Hallowell,** Clark Thread Co., Albany, Ga. **William B. Amos** of Stein, Hall & Co., Inc., Columbus, Ga., is corporate membership chairman, and **J. K. Boykin** of

Make the right move!

Use Louis Allis Textile Motors and Adjustable Speed Drives


SELECT-A-SPEDE
An adjustable-speed drive for operation on A-C power. New magnetic amplifier, adjustable voltage control. 5 to 150 HP, single motor or multi-motor range drives.
LOOM MOTORS
Built especially for loom service. For new, old, and 3- point mountings. ½ to 2 HP.
SELF-CLEANING MOTORS
Pioneered and developed by The Louis Allis Co. for textile applications. Special torques for card drives — soft starts for spinning frames — or any other special application.
AJUSTO-SPEDE
An Alternating Current adjustable speed drive using the versatile Eddy Current Clutch. ¾ to 75 HP. Also available in multi-unit range drives.
GENERAL PURPOSE
General-purpose motors include splash-proof as shown. Available with dye-house insulation, excellent for pump application in finishing and bleach plants.

Louis Allis has a special purpose motor or multi-motor range drive for any power requirement in the textile industry.

Louis Allis motors and multi-motored range drives are busy turning the wheels of the textile industry — on cards, pickers, warpers, tenters, spoolers, slashers, batchers, padders — and all the other complex machinery that produces America's fabric.

Let Louis Allis help you to select the proper motors or drives for greater production and more efficient operation.

Consult your nearest Louis Allis District Office or write us.

THE LOUIS ALLIS CO.

MILWAUKEE 7, WISCONSIN

TE-102

How To Save Dollars By Spending Pennies

EPI Bobbin

Every EPI Bobbin is dynamically balanced because experience has shown that materials and methods used in mass production can never be assumed to be perfect. Your own mill methods prove this.

Dynamic testing and balancing costs us—and you—only a few cents per bobbin. But mill records show that sooner or later unbalanced plastic bobbins can cause serious troubles and that *much of the damage is done before the defect becomes noticeable.* Poor wind, uneven packages, and expensive spindle and machine wear cost you many dollars . . . to say nothing about having to discard the bobbin before its time.

You'll save dollars when you specify EPI Bobbins for Nylon and other synthetic fibres.

Stronger, too . . .

ENGINEERED *Plastics*

INCORPORATED

Gibsonville, North Carolina

Personal NOTES ABOUT MEN YOU KNOW

National Aniline Div., Allied Chemical & Dye Corp. is publicity chairman.

John S. G. Dickson is now plant engineer at Wamsutta Mills, New Bedford, Mass. He was formerly with Crown Manufacturing Co.

Formerly assistant superintendent at Whittier Mills Co., Chattahoochee, Ga., **William R. Jenkins** has been appointed resident manager of the new Cleveland, Ga., plant of Ames Tex-

Mr. Jenkins

tile Corp. Assisting Mr. Jenkins as general overseer will be **Erwin Sibley** who was previously superintendent of weaving for a group of three Mexican mills and prior to that with Milledgeville (Ga.) Mills.

Ralph Scheufler, assistant treasurer, is now also secretary of Berkshire Woolen Co. He succeeds Harding W. Whitney, retired.

Andrew J. Wishard has been made treasurer of Dominion Textile Co., Ltd., of Drummondsville Cotton Co., a partially owned subsidiary, and of Montreal Cottons Ltd. He has been with the first named firm since 1905.

Jack H. Scott, general superintendent, has been appointed plant manager of Durham (N. C.) Hosiery Mills No. 6. Paul A. Whetstone, laboratory manager, has been promoted to plant superintendent of all yarn departments; and **J. D. Byrd** has been made superintendent of 84-needle knitting and finishing. Replacing Mr. Whetstone is **H. R. Higgins.**

Joseph C. Cobert has resigned as vice-president in charge of quality control at Hugh Grey Hosiery Co.

James Lees and Sons Co. has appointed **George B. Burpee** as superintendent of the tufted carpet divi-

Cut Costs still further!

WITH THE

HYSTER LOAD-GRAB

Hyster case records consistently prove that handling costs are being reduced *still further* with the Hyster Load-Grab—as compared to handling by other methods! Hyster pioneered and developed the Load-Grab attachment illustrated here. Today, the Load-Grab is the industry's accepted standard of operation! YOU SHOULD SEE THE HYSTER LOAD-GRAB WORKING! The Hyster Load-Grab works beautifully with the NEW HYSTER WATERCOOLED 3000-LB. TRUCK which is smaller than most 2000-lb. trucks. The Load-Grab works on all 2000 (as pictured), 3000 and 4000-lb. Hyster trucks.

Call your Hyster Dealer, or write for information directly to:

HYSTER COMPANY

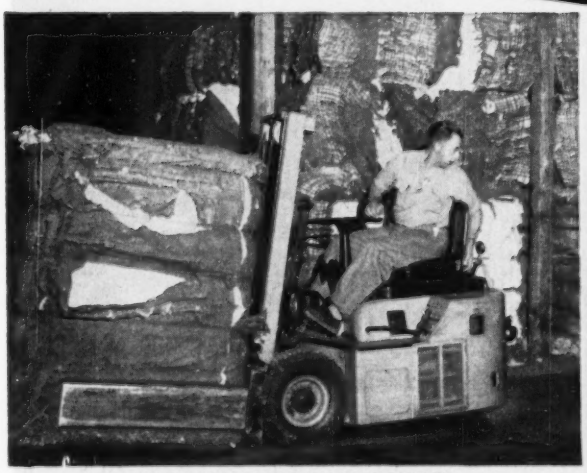
2902-57 N. E. Clackamas.....Portland 8, Oregon
1010-57 Myers Street.....Danville, Illinois

HANDLES 3 BALES AT A TIME

FASTER, EASIER BOXCAR LOADING

THERE'S PROFIT IN HYSTER POWER

HYSTER COMPANY • Four Factories: Portland, Oregon; Danville, Illinois; Peoria, Illinois; Nijmegen, The Netherlands.

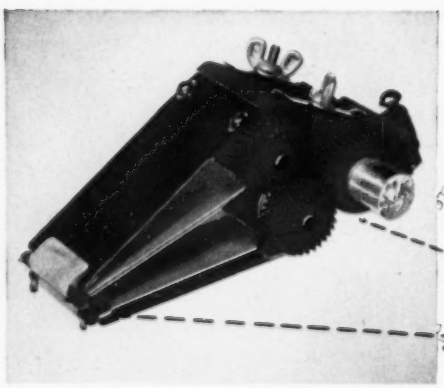


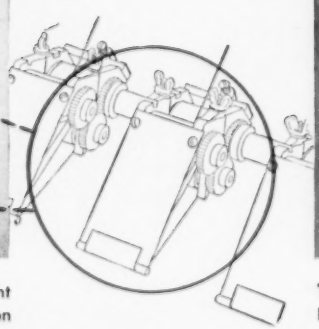
POSITIVE GRIPPING ACTION

HANDLES BALES VERTICALLY AND HORIZONTALLY

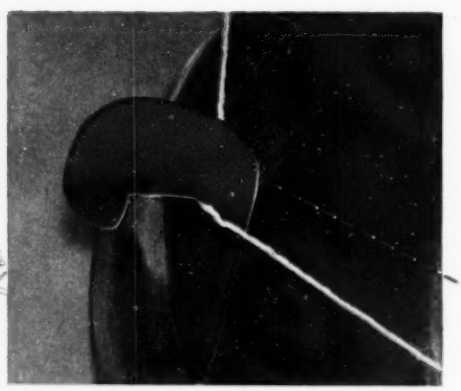
BEARINGS molded of Du Pont nylon do away with the time-consuming, costly job of lubrication. Oil damage is eliminated. Nylon bearings give long service . . . have run the equivalent of two years' use without signs of wear.

Parts of Du Pont nylon need

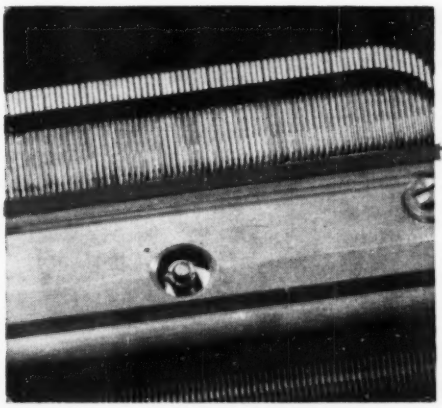


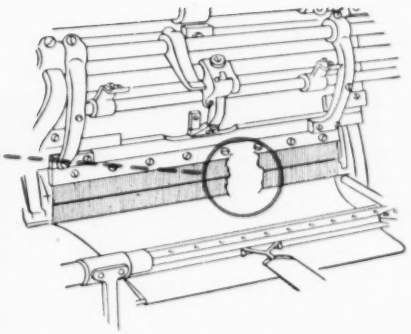


LONG DRAFT UNIT parts of tough molded Du Pont nylon absorb shock . . . damp noise and vibration . . . won't chip or crack. These nylon parts need no lubrication . . . help produce a better yarn, free of contamination.

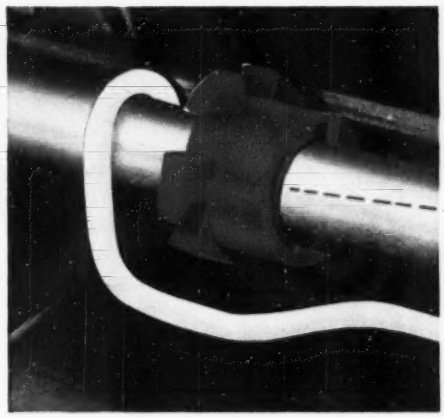


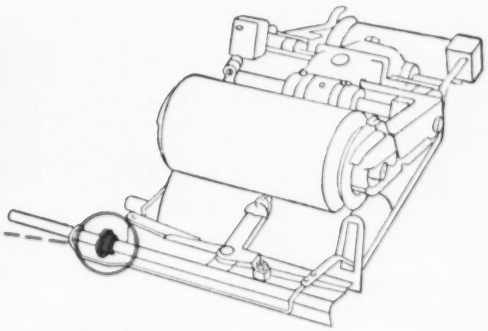
TRAVELERS molded of Du Pont nylon need no lubrication . . . provide more yardage on bobbins . . . give smooth operation . . . save production time . . . cut costs. Du Pont nylon is wear-resistant . . . unbreakable in normal use.





VERGE PLATE inserts of Du Pont nylon provide a better cushion for sinkerbacks. Their long life provides a substantial saving in downtime, operating and maintenance costs.

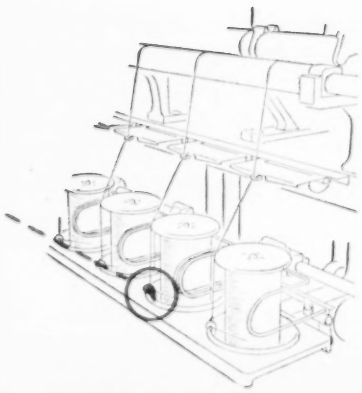




YARN UPTWISTER parts molded of Du Pont nylon are strong, tough, wear-resistant. They need no lubrication... have a smooth, snag-free surface . . . reduce danger of yarn breakage.

little or no lubrication

. . . reduce yarn contamination . . . give long service . . . lower operating costs



Service records in many textile mills have proved that machinery parts of Du Pont nylon:

- need little or no lubrication
- have exceptional resistance to wear
- are lightweight, yet strong and tough—even in thin sections
- are unaffected by moisture and common chemicals
- will operate at temperatures to 250°F.

Du Pont nylon's performance has led to numerous manufacturing economies and improvements in product quality. Perhaps it can help you. For information write: E. I. du Pont de Nemours & Co. (Inc.), Polychemicals Department, Room 189, Du Pont Bldg., Wilmington 98, Delaware.

DU PONT
REG. U.S. PAT. OFF.
BETTER THINGS FOR BETTER LIVING
..THROUGH CHEMISTRY
Polychemicals
DEPARTMENT
PLASTICS • CHEMICALS

Flooring of Northern Hard Maple in Stinson Knitting Mills, Brooklyn, New York.
(Photo by courtesy Supreme Knitting Mach. Co., Inc.)

foot-friendly!

NORTHERN HARD MAPLE

The hard-headed common-sense of mill operators and mill designers is the big reason for the acres of "foot-friendly" Northern Hard Maple floor throughout the textile industry. For it's common-sense (and scientific studies back it up) that tells us a floor of warm, *resilient* maple is far less tiring to stand on and work on than a floor that's cold and stony-hard! Common-sense tells us a bright, tight, cheerful maple floor is easy to keep clean, easy to maintain . . . and, because "there's always a new floor underneath," it's easy to refinish. Common-sense tells us Northern Hard Maple creates no dust, catches no lint, resists dents, scuffs and splintering. Yes, Northern Hard Maple floors give you *real* savings—savings that continue through the years. Ask your architect or see Sweets' (Arch. 12 K-MA). Write for new Flooring Textbook.

savings continue through the years

MAPLE FLOORING MANUFACTURERS ASSOCIATION
Suite 591, Pure Oil Building, 35 East Wacker Drive • Chicago 1, Illinois

FLOOR WITH NORTHERN HARD MAPLE
BEECH AND BIRCH

Personal NOTES ABOUT MEN YOU KNOW

sion at Bridgeport, Pa. He succeeds Robert M. Schantz, now with Cuneo Press. Other changes are: **Robert J. Carson, Jr.**, superintendent of the carpet yarn spinning plant at Glasgow, Va.; and **James P. McGowan**, superintendent of the Wilton and Velvet plant in the same mill.

New overseer of finishing at Lincoln Mills, Pascoag, R. I., is **Henry D. Caldrice**, formerly with Arcadia Woolen Mills. Also new at Lincoln is **James Catlow**, second shift overseer of spinning, who was in the spinning department of the now liquidated Geneva Mill of Wanskuck Co.

John E. Paradine, recently named vice-president of Westminster, Ltd., men's hosiery division of Nolde & Horst Co., New York, will be in charge of styling, packaging, advertising, and promotion, and of the sales force.

W. N. Scroggins, formerly overseer of weaving, has been promoted to superintendent at Opelika (Ala.) Manufacturing Corp. **T. Holmes Floyd** continues as division manager of the plant and of the one at Hawkinsville, Ga.

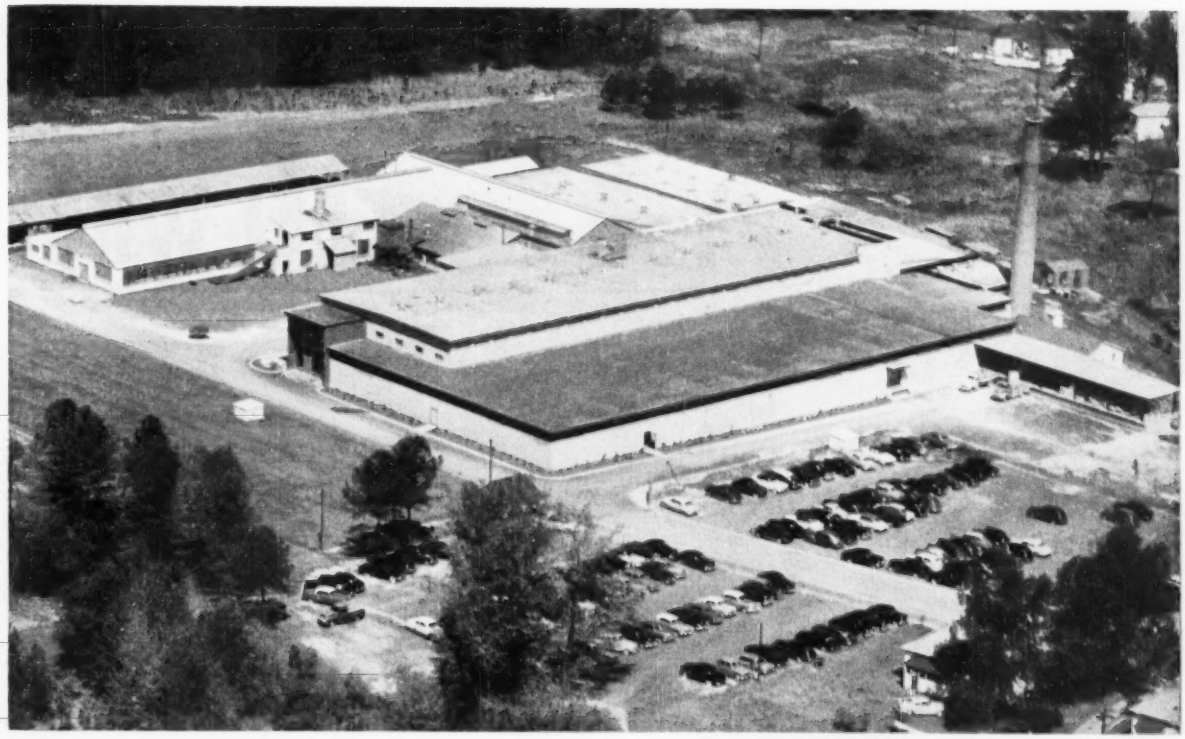
Richard M. Everett has retired as manager of the industrial fabrics department of the cotton and rayon division of Pacific Mills. However, he is being retained as an independent consultant on product development.

Manuel Vincent, previously in charge of Paulis Silk Co.'s number 2 mill at Pawtucket, R. I., is now superintendent of the new Campbell Ave. plant in the same city.

C. S. Tatum has succeeded K. G. Hudson, deceased, as president of Pilot Mills Co., Raleigh, N. C. Other elections were: **S. G. Riley, Jr.**, general manager; **K. G. Hudson, Jr.**, treasurer, and **J. G. Hudson**, secretary.

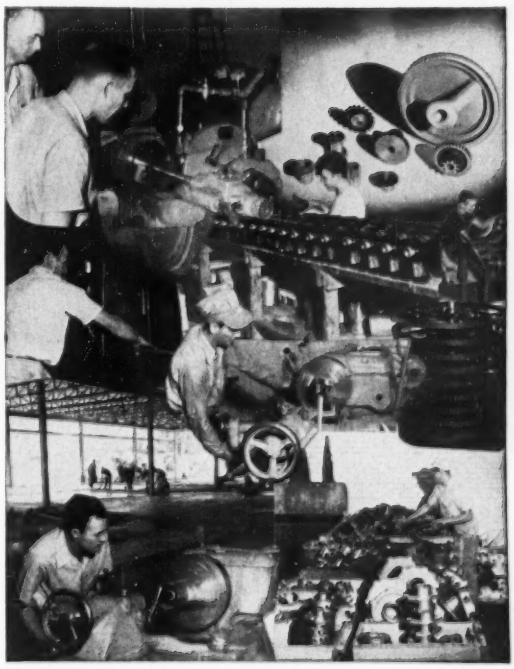
Obituaries

Charles I. Finigan, circulation manager of the six W. R. C. Smith Publishing Co.'s magazines until his retirement August 1, 1951, died on August 18. Born July 7, 1885, he



At Your Service . . .

These facilities are dedicated to the development of the finest textile specialties and replacement parts. Here in a streamlined new plant highly skilled workers using the finest equipment are daily supplying the textile industry with famous C-1 Ball Bearing Comb Boxes, Off End Stands, Coiler Conversion Units for cards and drawing frames as well as replacement parts for preparatory equipment. On the drawing boards and in the development laboratory new labor saving devices are being designed and tested. These facilities are "At Your Service" and we invite you to visit us and inspect them.



Southern States Equipment Corp.

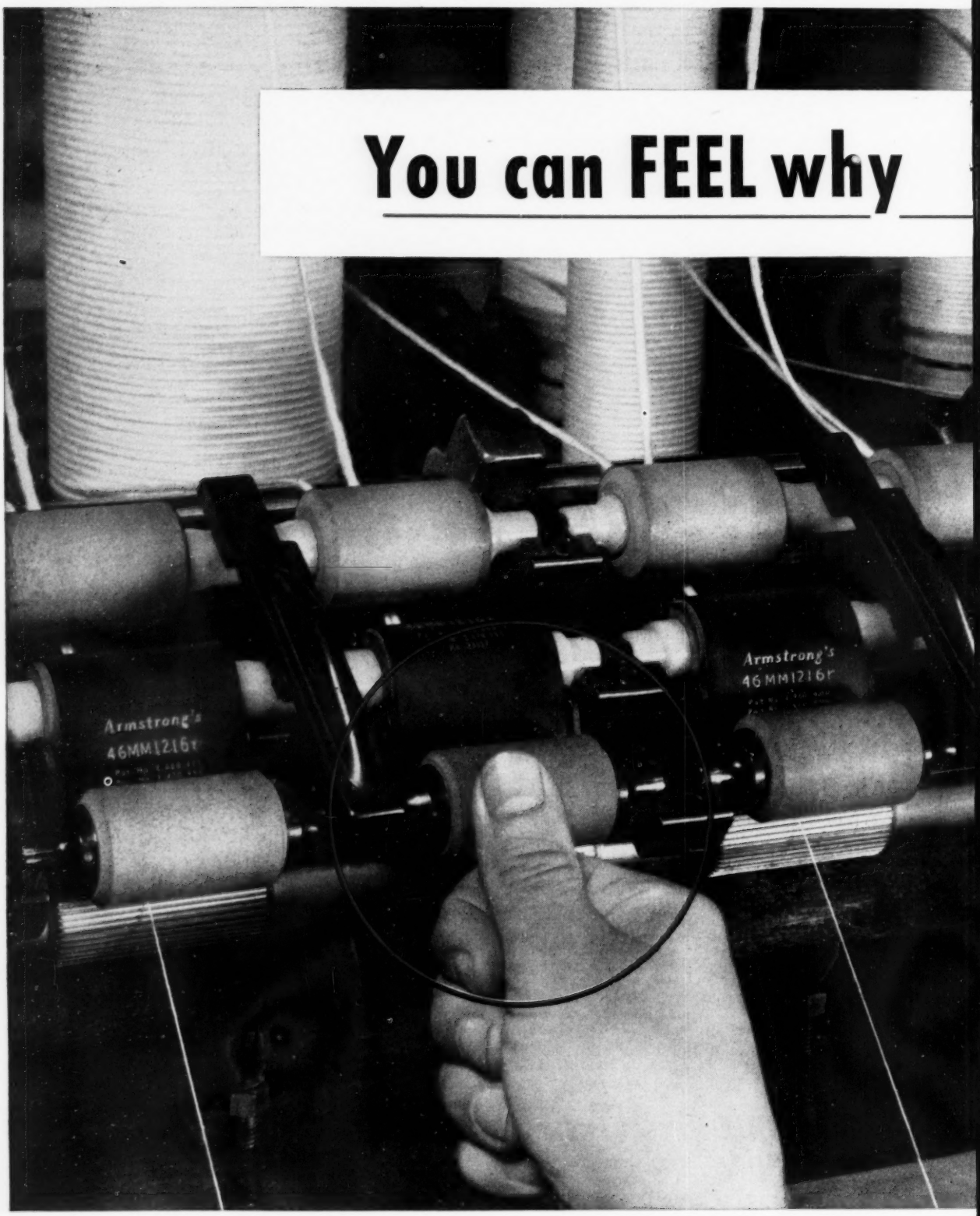
HAMPTON GEORGIA

Representatives - Mechanical Division

William A. Knapp	Matthews Equipment Co.	John C. Walters	C. H. Kennington	Frank Birchfield	Textile Parts & Machine Co.	F. C. Todd, Inc.
Atlanta, Georgia	Providence, R. I.	Hampton, Georgia	Charlotte, N. C.	Alex. City, Ala.	Gastonia, N. C.	Gastonia, N. C.

Largest Manufacturer of Cast-Tooth and Cut-Tooth Gears in the South

You can FEEL why



ARMSTRONG'S

this cot stops

SERIOUS EYEBROWING

Armstrong's newest cot, the NO-742-S, keeps its "bite," packs waste well back even after months of spinning coarse yarns.

Run your fingertips over the drafting surface of an NO-742-S Accotex® Cot. Right away you'll know why Armstrong's newest synthetic roll cover stops serious eyebrowing so well.

The "bite" of the spinning surface does the trick. The NO-742-S packs waste fibers back where they can't drop off the clearer board and damage the yarn.

Mill tested for 2 years

Equally important, the NO-742-S Accotex Cot keeps its "bite" even after months of service. Over two years of tests in mill spinning rooms have proved this. The 742-S runs exceptionally clean and has outstanding resistance to slicking and glazing. In fact, the tests showed mill men that these cots needed to be rebuffed no more than once a year.

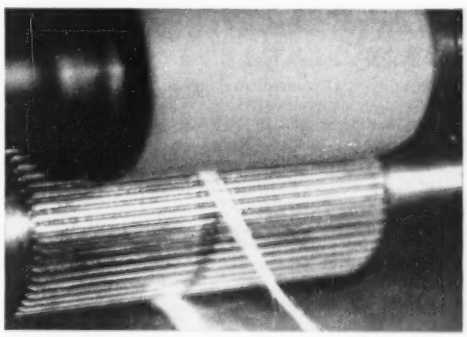
How effective are Armstrong's NO-742-S roll covers in controlling eyebrowing? Well, here's what one mill supervisor says. "Just walking around the spinning room, I can pick out which rolls are covered with these cots without lifting a single clearer board." "When all the others have eyebrows," he continues, "these new ones don't. With normal picking schedules, we never have an eyebrow on frames equipped with these cots."

Even with coarse yarns

These cots were tested on all types of spinning equipment—and on many different kinds of yarn. The tests showed that the 742-S cot would effectively eliminate eyebrowing problems even on very low-count yarns where eyebrowing had been serious. Many of the mills which helped test the 742-S were so convinced of its superiority that they switched to it entirely on their spinning operations.

Your Armstrong man will be glad to tell you more about the NO-742-S Accotex Roll Cover—or to arrange a test on your frames. Call him, or write direct to Armstrong Cork Company, Textile Products Department, 6510 Ivy Street, Lancaster, Pa. The NO-742-S cot is available for export.

WITH REVOLVING CLEARERS, USE THE LAP-RESISTANT J-490 COT



For spinning fine yarns, and for any count yarn with revolving clearers, Armstrong's J-490 Accotex Cots have proved ideal in thousands of mills. Special electrolytes added to the J-490's long-wearing synthetic rubber composition make it highly resistant to lapping. The J-490 runs exceptionally clean, too. If lapping's a problem, call your Armstrong man today and arrange a test side of J-490 Accotex Cots.

ACCOTEX COTS — NO-742-S • J-490 • NC-727

...but TENNANT
DRY-CLEANING
makes the difference!

What a contrast! An old, oil-soaked floor made 533% brighter . . . safer than before . . . and given a smooth, hard surface that resists dirt penetration —*all because it's dry-cleaned the* TENNANT *way.*

Gives you BRIGHTER, SAFER FLOORS . . . AT LESS COST

Are there dark, slippery floors in your mill due to prolonged wet-scrubbing? Then check these advantages of the TENNANT System:

RECONDITIONS your floors. Fast, easy-to-use Tennant machine brings your floors to life again! Gets rid of dark, rough, oil-soaked fibers . . . leaves floor bright.

HARDENS surface to resist wear. Special sealing process fills, binds and hardens wood fibers. Makes your floor resist dirt penetration . . . prolongs floor life.

DRY CLEANS, eliminates scrubbing. A fast, one-man job . . . with no mess or bother. Keeps floor lustrous, DRY, non-slippery. Enthusiastically approved by hundreds of mills.

WRITE TODAY for full information.

G. H. TENNANT CO.
2524 NORTH SECOND STREET
MINNEAPOLIS 11, MINN.

TENNANT INDUSTRIAL FLOOR MACHINE

- Cleans floors, picks up soilage.
- Complete accessories for ALL your floor maintenance work.

Tennant Floor Machines have 12" or 16" revolving steel wool roll (or other accessory) that smoothly removes dirt and traffic stains. Very speedy and easy to use. Provides a smooth, dry, hard surface . . . saves man-hours.

ASK FOR ILLUSTRATED BULLETINS

The way to finer floors
TENNANT
Floor Maintenance System
ESTABLISHED 1870

The Tennant System ENDS SCRUBBING

Floors, like roads, are safer when DRY!

Personal NOTES ABOUT MEN YOU KNOW

joined the Smith organization in 1919 Prior to World War I Mr. Finigan was circulation manager of the Montgomery (Ala.), Advertiser, later going to Troy, N. Y., which post he left to come to Atlanta.

Allen C. Ashley, 86, partner in Arcola Silk Co. until his retirement in 1931, August 6.

Iser P. Cohen, senior partner in Cohen-Weisman Sportswear Corp.

J. C. Funderburk, 64, traveling representative for Bahan Textile Machinery Co. in central and eastern North Carolina and Virginia.

Lorenzo T. Gregory, 83, one of the organizers of the Kershaw, S. C., plant of Springs Cotton Mills.

W. Harold Hamrick, employed by Crawford & Garner, Inc., Spartanburg, S. C., August 11.

George Hodges, 49, superintendent of the printing division of Southern Bleachery & Print Works, Inc., Greenville, S. C.

Paul E. Hunter, 49, general credit manager of Pacific Mills, August 10.

Alphons Otto Jaeger, 67, consultant for American Cyanamid Co. since his retirement in 1951.

Clement Kingman, 49, president and superintendent of Providence (R. I.) Wool Combing Co.

John A. Korschen, 70, vice-president and general manager of Chipman Knitting Mills, Inc., until his retirement in 1951.

Joseph J. Riva, 63, partner in La Francaise Dyeing & Finishing Co., Inc., August 10.

E. Max Schenke, textile technologist for Montgomery Ward & Co., and a member of the staff of the National Association of Hosiery Manufacturers.

William J. Storie, 76, retired manager of Hardwick Woolen Mills, Inc.

William H. Thatcher, 74, retired executive of Standard-Coosa-Thatcher Co.

Seal of Achievement

in textile research

In the last fifty years we have witnessed — and made significant contributions to — the technical progress and steady growth of the textile industry. Continuous cooperation between this industry and our research and field staffs is the key to our successful development of an impressive group of efficient products for textile application. The latest of these —HYDRO-PRUF* — has created a revolutionary advance in water repellency standards. From laboratory to mill application — from theory to practice — Arkansas personnel know your problems and work with you to solve them.

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ARKANSAS CO., INC.

Serving the Textile Industry for Half a Century

NEWARK, NEW JERSEY

Originators of

HYDRO-PRUF

the silicone resin water repellent

BLEACHING
DEGUMMING
DISPERSING
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DYEING
FULLING
KIER BOILING
LUBRICATING
MILDEW-PROOFING
MOTH-PROOFING
PENETRATING
SCOURING
SHRINKAGE-CONTROL
SIZING
SOAKING
SOFTENING
STRIPPING
THROWING
WATER-PROOFING

For further information use Handy Return Card, Page 208

...From SPARTANBURG, S.C.

TEXTILE NEWS

CONDITIONING BOXES

Want boxes that resist moisture, chemicals, steam, and dyes? C-D-F builds a superior line of boxes and trucks from Dilecto, a tough laminated phenolic plastic. Although higher priced, Dilecto boxes last for years, are little affected by many acids, are insoluble in ordinary solvents. They withstand heat, steam, water. Get the facts. Talk over your special materials handling problems with an expert . . . your C-D-F sales engineer.

ROVING CANS

Strong, tough, smooth. That's the industry reputation for C-D-F roving cans. Genuine Diamond Vulcanized Fibre body is finished inside and out with a moisture resistant synthetic enamel. Steel top rim is rust resistant plated, smooth, snugly fitted. From a sample can to carload full . . . with C-D-F you get smooth, seamless uniformity.

Write now for new folder showing complete C-D-F receptacles line!

ALL PRODUCTS OF

NEWARK 11, DELAWARE

. . . with Textile Headquarters at 834 Haynes Street, Spartanburg, South Carolina. Call Spartanburg 3-6397 for DILECTO and DIAMOND FIBRE materials handling equipment . . . trucks, boxes . . . loom parts . . . top-speed shipments of CELORON silent gear blanks . . . friendly service from your C-D-F sales engineer.

What the TEXTILE MILLS are doing

A one-story plant containing 70,000 sq ft floor space is being built in Ellsworth, Maine, by **Argonne Worsted Co.** It will be equipped with new French system worsted spinning frames and will spin blends as well as worsteds.

The **Howard Arthur Manufacturing Co.,** Fall River, Mass., was recently sold by Millville (N. J.) Manufacturing Co. to Edward G. Jones, senior partner of Jones, Gardner & Beal, cotton merchants. It is expected that the plant will remain in operation.

John G. Archer, formerly with Rollins Hosiery Mill, is now president and one of the chief stockholders of the newly organized **Best Fit Hosiery Mill, Inc.,** Des Moines, Iowa.

A corporation headed by H. King Cummings, president of D. E. Cummings Co., Newport, Me., and of Guilford (Me.) Woolen Mills, is establishing a woolen and blended fabrics mill at Eastport, Me.

Diamond Hosiery Corp. has acquired **Hamilton Hosiery Mills,** which include five mills in North Carolina, Virginia, and Pennsylvania. A. Phillip Goldsmith, Diamond's president, continues as head of the organization; Abraham Feinberg, Hamilton's president, is now chairman of the board.

At an outing given at Mayor John Smith's farm at Leaksville, N. C., 63 retired men and women, among them a number formerly employed by **Fieldcrest Mills,** agreed to form a Golden Age Club. All retired people from the area were invited to join the organization.

An addition of 260 x 75 ft is being erected at the Clearwater mills No. 2 of **Goodyear Tire & Rubber Co.,** Rockmart, Ga., to provide space and machinery for rubberizing rayon and nylon tire fabric.

More than 8,000 persons crowded into the recreation park of the **P. H. Hanes Knitting Co.,** Winston-Salem, N. C., during the annual Hanes Family Day outing. Prominent on the program was the crowning of "Miss Hanes Knitter," Miss Bonnie Mikles of East Bend, N. C., an employee in the company's sportswear department. Other events were: an exhibition of items made or produced by Hanes employees, a six-act stage show, an aerial exhibit, and, finally, supper for all in attendance. The new amphitheatre, seating more than 5,000 and built especially for the annual outings, was put to good use, with temporary seats and other space utilized for a capacity of over 7,000 persons.

The Alabama Supreme Court granted a $50,000 judgment to **J. Ralph Hart,** Gadsden, Ala., in his suit against Lawrence Products Co., Inc., and Benjamin Kahn for alleged violation of patent rights to a new type rug loom.

The newly organized **Kaytee Hosiery Mills,** Franklin, N. H., are in operation in part of the former Sulloway Hosiery Mills buildings.

Manchester (Conn.) Knitting Mills, a division of Roosevelt Mills, is moving from Manchester to 210 East Main St., Rockville, Conn., and occupying one of the former Hockanum Mills' buildings.

850 employees and their families recently attended the annual outing given by the Lockhart (S. C.) plant of **Monarch Mills.** The plant, a unit of Deering, Milliken & Co., was the recipient of two awards—a plaque for excellence in safety, and a flag with a gold star denoting the passing of 2,000,000 man-hours without a lost-time accident.

Ohio Falls Dye and Finishing Works Co., Louisville, Ky., has changed its name to **Ohio Falls, Inc.** This shortening is in line with the firm's modernization program, according to W. I. Wymond, president, who emphasized that there would be no change in ownership or management.

An employee of **Crystal Springs Bleachery** in Chickamauga, Ga., holds an employment record that would be rare in any industry. Charles H. Moats, a weaver, is now completing 64 years of continuous service and has been associated with four successive generations of the same textile family—the Jewells. Mr. Moats

No more "painty" odors—no more complaints from workers while we're painting!

Du Pont Announces

NEW ODORLESS
Color Conditioning Paints

Maintenance painting problems minimized in all areas of your plant where paint odors cause inconvenience.

Now Du Pont Color Conditioning, the scientific maintenance painting plan that puts the right colors and the right paints in the right places, takes another big stride forward. Du Pont paint chemists have developed new formulas that make Du Pont Color Conditioning Paints odorless during application, with only a faint odor noticeable as the paint dries. This means that you can put Du Pont's painting plan to work *without* the annoyance often caused by paint odors.

OTHER DESIRABLE QUALITIES ADDED

In formulating these new paints, Du Pont has gone beyond the substitution of odorless solvents for regular solvents. Color Conditioning Paints have been completely re-formulated to provide easier brushing, quicker drying and better hiding. Light tints and white are more resistant to yellowing than ever before. And Color Conditioning Paints are formulated with alkyd resin—famous for insuring long-lasting good looks and protection.

LOWER MAINTENANCE COSTS

Du Pont Color Conditioning costs no more than ordinary maintenance painting . . . less in the long run. Why not see for yourself how it can improve morale and production . . . reduce accident rates for you. Write for further information to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Dept. T310, Wilmington 98, Delaware.

DU PONT
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DU PONT
Color Conditioning
PAINTS

NOW ODORLESS

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

began his career in 1889 as a spinning room doffer at the Jewell (Ga.) Cotton Mills. Working in all departments of the mill for about four years, he was made a weaver and served in that capacity until the mill closed, at which time he moved to Chickamauga where the Jewells' had established the bleachery. Not only has Mr. Moats seen 64 years of service, but his wife has been employed for 53 years by the same two companies.

Wennonah Cotton Mills, Lexington, N. C., recently celebrated their 67th anniversary.

The **A. D. Juilliard & Co.** mills have been sold to **United Merchants & Manufacturers Corp.** for a reported sum of $7,351,000. The sale involves all assets of the firm, including plants in Providence, R. I., and in Georgia, North Carolina, and New York.

The production management section of **United States Rubber Co.'s** textile division has moved from New York to Winnsboro, S. C., to permit better coordination between the production management section and the division's seven southern plants.

Woodside Mills have started foundation work for addition of two boilers at the Simpsonville, S. C. plant. The total cost will be in excess of $50,000.

About 11 acres of land have been purchased at Vermont Ave. and Figueroa St., Los Angeles, Calif., by **Adamo Co.,** and construction has begun on several one-story buildings. The total cost is reported to be over $700,000, with machinery and facilities. When buildings are available the plant will move to its new location.

A one-story addition is under construction at **Alamac Knitting Mills, Inc.,** Indian Orchard, Miss.

Aviv Knitwear Corp., recently chartered, will manufacture knit outerwear. Albert Bennin, 305 Broadway, New York, N. Y., is attorney.

B. H. S. Knitters, Inc., was recently incorporated for manufacture of a line of knit goods. Incorporators are Henry G. Canda, Jr., and F. Stanley Saurman, Fidelity-Philadelphia Bldg., Philadelphia, Pa.

A pilot plant has been established by **Botany Mills, Inc.,** at its Passaic, N. J., plant for research and experiments in development of fabrics, including blends of new synthetic fibers.

Buffalo Weaving & Belting Co., 260 Chandler St., Buffalo, N. Y., has plans for a one-story addition to the plant, to cost approximately $25,000.

Contract has been let by **Burlington Mills Corp.,** Cramerton (N. C.) Division, for a two-story addition to the Mayflower mill, for expansion in the weaving division and for warehouse service. About $100,000 additional will be used for equipment and facilities. The Canadian subsidiary of the firm, Burlington Mills

NON-FLUID OIL
TRADE MARK REGISTERED

7 Out of 10 Textile Mills Use NON-FLUID OIL

Textile men will not buy a lubricant year after year unless it pays off in performance. NON-FLUID OIL has withstood every test and is preferred by seven out of ten textile mills.

NON-FLUID OIL, the drip-less, waste-less lubricant is used more than any other because it out-performs and outlasts ordinary oils 3 to 5 times, resulting in a reduction of lubricant and application costs. For 57 years NON-FLUID OIL has been standard for textile mill lubrication . . . and there's a specific grade for carding, spinning, weaving—in fact every machine in your mill.

Want to get the best in lubrication and to eliminate "seconds" due to oil leaks and spatters? Send for a testing sample of NON-FLUID OIL—stating the type of machine on which your tests will be made. See for yourself why more textile mills use more NON-FLUID OIL than any other lubricant.

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Southern District Manager: Lewis W. Thomason, Jr.
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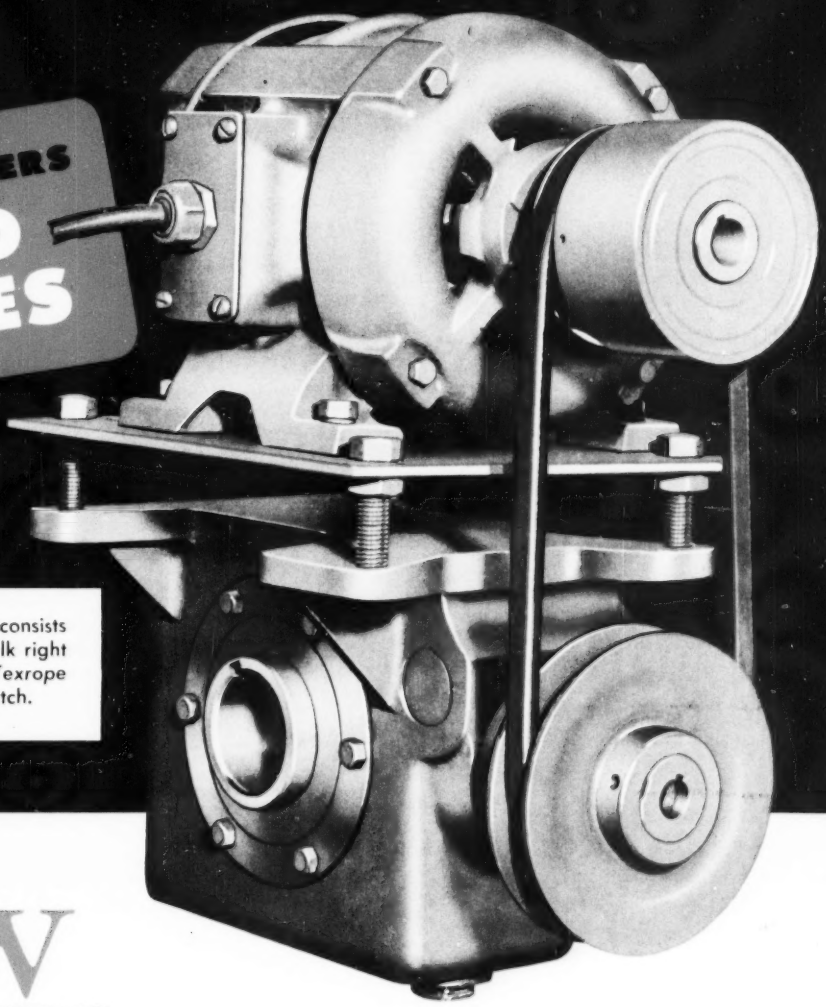
NON-FLUID OIL is not the name of a general class of lubricants, but is a specific product of our manufacture.

ALLIS-CHALMERS

CARD DRIVES



New Allis-Chalmers card drive consists of *Quick-Clean* motor driving Falk right angle gear reducer through *Texrope* V-belt drive and centrifugal clutch.

Now

Have a Neater, Lighter Card Room

IF YOU'RE STILL OPERATING with a jungle of shafts and overhead belt drives for lack of a good, reasonably priced individual card drive, here's the drive for you.

Allis-Chalmers card drive now provides full protection from lint, plus enough power at the shaft for fastest possible card operation. *Quick-Clean* motor and highly efficient gear reducer are combined in this compact, reasonably priced power package.

Easy to Install

There's no need to move cards to install this drive. Unit requires practically same floor space as tight-and-loose pulley drive. It is mounted directly on card shaft with torque arm to keep the gear box from rotating. No strain on card arch to cause vibration or distortion.

Cuts maintenance, too! No heavy, expensive belts to replace . . . no periodic belt dressing. In addition, drive is practically vibrationless, increasing life of card and making it easier to keep in adjustment. There's also a special, slow speed starter for this drive. Get details from your nearby Allis-Chalmers district office or distributor, or write Allis-Chalmers, Milwaukee 1, Wisconsin for Bulletin 51 B 7867. A-4159

Quick-Clean, Texrope and *Vari-Pitch* are Allis-Chalmers trademarks.

ALLIS-CHALMERS

A-C ALLIS-CHALMERS

Why

Change Sheaves to Change Yarn Numbers?

USE WIDE RANGE *Vari-Pitch* sheaves. Get stepless speed adjustment over a range of nearly 2 to 1, without changing sheaves. Speed adjustment is simple, fast and accurate. New design permits mounting sheave so adjustment is on motor side . . . out in open . . . instead of in cramped space between sheave and spinning frame.

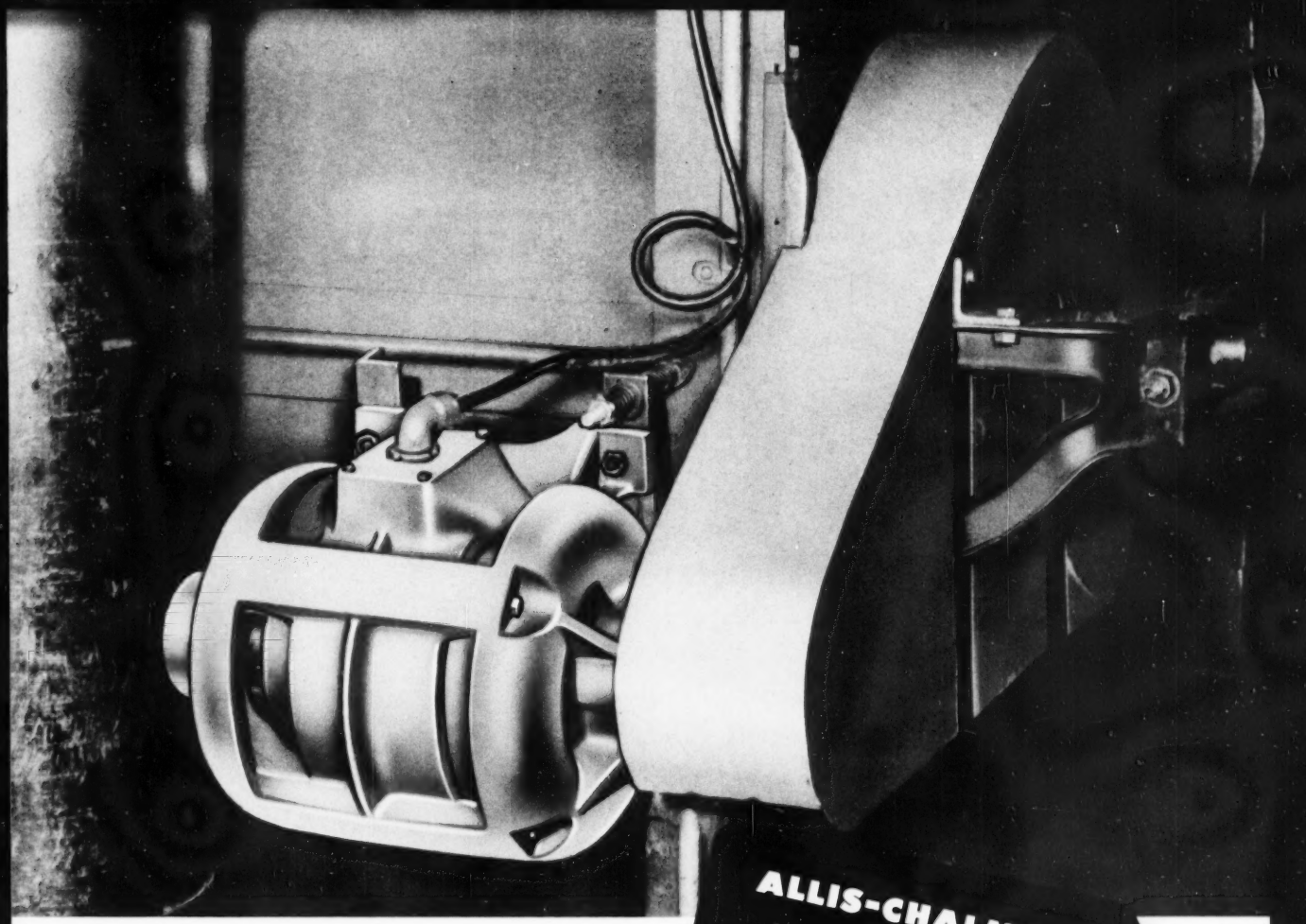
Special Motor Used

Quick-Clean motors for Allis-Chalmers spinning frame drives are designed for humid, lint-laden mill atmosphere. Internal passages are smooth, hard and streamlined. Lint getting into the motor is swept right out through large unobstructed openings by powerful fans.

Allis-Chalmers general purpose starters are recommended for these spinning frame drives. They are compact . . . easy to install and wire.

Ask your nearby A-C representative or distributor for complete information. Or write Allis-Chalmers, Milwaukee 1, Wisconsin.

ALLIS-



ALLIS-CHALMERS
Roving Frame
DRIVES

Stop

Rough Roving Frame Starts

SLOW, SMOOTH ACCELERATION, using Allis-Chalmers roving frame motor, reduces ends down, helps produce uniform roving.

This motor takes almost three times as long as a standard motor to reach full speed. Slow, smooth acceleration provides e-v-e-n tension on the roving during starting periods. Special windings permit relatively high torque when required with low torque for smoother acceleration in normal operation.

Quick-Clean frame design allows powerful fans to sweep lint and dirt in and out with the cooling air.

Allis-Chalmers can also supply your other needs, including *Texrope* V-belt drives and special slow speed starters.

Call an Allis-Chalmers distributor or district office. Or, write Allis-Chalmers, Milwaukee 1, Wis.

CHALMERS

A-C
ALLIS CHALMERS

Here's

ALLIS-CHALMERS "Certified" SERVICE

Specialized Service to Back These Drives

Allis-Chalmers distributors and district offices are equipped to provide the application help you need. In addition, the distributors listed below operate "Certified Service" shops. Here factory-approved methods and parts are used to assure like-new service from your motors, transformers and control.

Allis-Chalmers District Offices and Certified Service Shops in Textile Areas

Allis-Chalmers textile specialists are located in the following cities:

Atlanta, Georgia
Birmingham, Alabama
Boston, Massachusetts
Charlotte, North Carolina
Chattanooga, Tennessee
Dallas, Texas
New Orleans, Louisiana
Providence, Rhode Island
Richmond, Virginia

Certified Service Shops

ALABAMA

Birmingham
Electrical Repair & Service Co.
2411 First Ave., South

Montgomery
Standard Electric Co.
505 N. Decatur St.

CONNECTICUT

Hartford
Charles H. Leppert
100 Walnut Street

Waterbury
Electric Motor Repair Co., Inc.
2101 S. Main Street

GEORGIA

Albany
Georgia Electric Co.
927 Roosevelt Ave.

Atlanta
Bearden-Thompson Electric Co.
1085 Bankhead Ave., N.W.

Columbus
Smith-Gray Electric Company
710 Third Ave.

LOUISIANA

New Orleans
Industrial Electric, Inc.
3227 Magazine Street

Shreveport
Shreveport Armature & Electric Works, 800 Spring St.

MAINE

Brewer
Stanley J. Leen Company
54 Wilson Street

MASSACHUSETTS

Lawrence
Roland B. Glines Co.
265 Lowell Street

Springfield
Electric Motor Repair Co.
11 Park Street

NEW HAMPSHIRE

Concord
A. S. Tracy
28 Green Street

NORTH CAROLINA

Charlotte
Southern Electric Service Co., Inc., 714 W. Trade Street

Greensboro
Southern Electric Service Co., Inc.

Rocky Mount
Hammond Electric Company
824 S. Church Street

SOUTH CAROLINA

Greenville
Southern Electric Service Company, Inc.

Spartanburg
Southern Electric Service Company, Inc.

TENNESSEE

Columbia
Middle Tennessee Armature Works, 113 Andrews St.

LaFollette
Standard Armature Works
LaFollette, Tenn.

Memphis
Industrial Electric & Supply Co., Inc., 62 Auction Ave.

TEXAS

Amarillo
G. E. Jones Electric Company Inc., 212 N. Polk Street

Dallas
Industrial Electric Equipment Co., 1119 S. Industrial Blvd.

Houston
Roy A. Berentz Co.
1400 Carr St.

VIRGINIA

Richmond
Wingfield & Hundley
13 South 17th Street

Roanoke
Virginia Armature Company
310 W. Salem Avenue

ALLIS-CHALMERS

Get More Information

Allis-Chalmers Manufacturing Company, Milwaukee 1, Wisconsin

Please send me literature checked below.

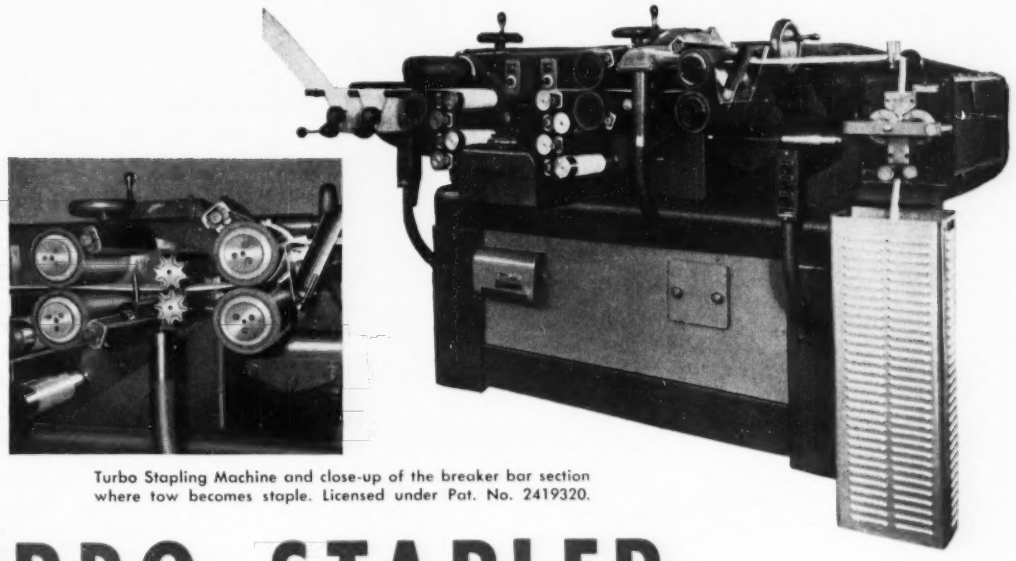
- ☐ Handy Guide to Motor Selection 51B6052
- ☐ *Quick-Clean* Textile Motors 51B6055B
- ☐ Across-the-Line Starters 14B7132
- ☐ Reduced-voltage Starters 14B7215
- ☐ Wide Range Stationary Control Sheaves 20S7590
- ☐ *Vari-Pitch* Drive Engineering Data 20B7499

Name..... Title..... Company.....

Street..... City and State.....

A-4159

Short-Cut to Synthetic Fiber Spinning



Turbo Stapling Machine and close-up of the breaker bar section where tow becomes staple. Licensed under Pat. No. 2419320.

the TURBO STAPLER

Spun yarn producers claim savings up to 12 cents per lb.!

The Turbo Stapler produces a sliver of controlled staple length from synthetic tow. It can take tow up to nine inches wide, tensions and heats the fibers, removing crimp and reducing denier if desired — reduces the tow to staple and replaces any desired degree of crimp. The Turbo Stapler does all this in one simple operation without skilled labor. Depending on the fiber and denier, it produces up to 125 pounds per hour of uniform sliver with the desired hand.

Open-sided construction and easily reached controls make change over to any synthetic fiber a matter of minutes. Speed is controlled. Heat is controlled. Drawing is controlled. Breaking is controlled. Crimping is controlled. And all controls are calibrated. Fiber breakage occurs at random times — there are no co-terminal fibers. Evenness and fiber parallelism are excellent — helps produce evenly blended yarns of highest quality.

With the Turbo Stapler, doubling and drafting operations are drastically cut. Finished yarn can be produced at about one-half the capital investment of conventional systems. Turbo engineers working with the Perlok System have developed a completely dependable machine capable of using any synthetic tow. It is easy to operate, easy to service and is backed by the Turbo reputation — "Builders of Precision Machines for a Quarter-Century". The "Turbo Stapler" folder tells the complete story. Write for a copy.

Facts About TURBO Tow Processing . . .

LOWER COST

(1) Less capital expense for machinery, less space, less skilled labor.
(2) Pre-roving operations reduced to a new minimum — drawing can be simplified because sliver is amazingly even and parallel.

VERSATILITY

(1) handles all synthetic tow.
(2) minimum down-time for change over to different fibers, deniers, staple lengths or crimp.
(3) additional end uses for your present inventory through alteration of staple length, filament denier, crimp and tenacity.

EVEN YARNS

(1) sliver is more even — it's made from uniform tow.
(2) no co-terminal fibers — natural staple length variation.
(3) staple length can be controlled to match natural fibers — better blends.

TURBO SINCE 1929

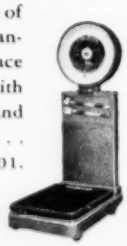
TURBO MACHINE COMPANY, LANSDALE, PA., U. S. A.

Makers of Precision Hosiery Finishing Machines — Crimpers — Crimp Setters

NEW PORTABLE SCALES • NEW COUNTING SCALES • NEW FLOOR SCALES • NEW BENCH SCALES • NEW MOTOR TRUCK SCALES • NEW MILK RECEIVING SCALES • NEW OVER-UNDER SCALES • NEW BUILT-IN SCALES • NEW HOPPER SCALES • NEW TRACK SCALES • NEW PRINTWEIGH SCALES

44 Ways Better...

A great new line of Toledos! *44 new features* are now added to the traditional accuracy and dependability of Toledo Scales including—double pendulum mechanism in one-piece sector design . . . dial installed to face any of eight directions . . . new clean-line design with handsome gray finish. Complete range of types and capacities. Get your scale information up-to-date . . . write today for the new condensed catalog No. 2001. Toledo Scale Company, Toledo 1, Ohio.



Model 2181—New version of the world's most widely used portable dial scale.

Today more than ever

TOLEDO®

HEADQUARTERS FOR SCALES

What the TEXTILE MILLS are doing

Hosiery Co. of Canada Ltd., is equipping and expanding its Lachine, Que., mill for production of 66-gauge 12-denier full-fashioned hosiery. It presently manufactures 60 and 51-gauge 15-denier stockings.

Carl Simon, president and treasurer of **Carlson's Garnetting Mills,** Waltham, Mass., has purchased the mill and business of **Duplex Garnetts, Inc.,** Framingham, Mass. Operations will be continued as heretofore.

Contract has been awarded by **Cashmere Corp. of America, Inc.,** Cleveland, O., for a pilot plant at its recently acquired mill site at Weaverville, N. C. Other buildings will be constructed later on, to be given over largely to manufacture of sweaters.

The plant of **Bronx Knitting Mill** has been removed to 8755 Kittyhawk Ave., Los Angeles, Calif., for increased output.

Contract has been let by **Buck Creek Cotton Mills,** Siluria, Ala., for rebuilding of structures destroyed by last spring's tornado. The loss was reported to be $3,000,000. The company will also construct a new warehouse at the mill with approximately 30,000 sq ft floor space.

Colony-Sharp Carpet Co., Trenton and Auburn Sts., Philadelphia, Pa., has a one-story addition to the mill under construction.

E. Dole Co., Inc., Mad River Mill, Suncook, N. H., has completed installation of woolen yarn machinery in part of the China Mill of Textron, Inc., secured under lease, and is giving employment to about 50 persons.

A recent fire at **Dyecraft, Inc.,** 1148 East 11th St., Los Angeles, Calif., resulted in damage estimated at $100,000, including building, equipment, and stock.

A one-story addition to the plant of **A. D. Ellis Mills, Inc.,** Monson, Mass., recently completed, is being used for increased capacity in the finishing division.

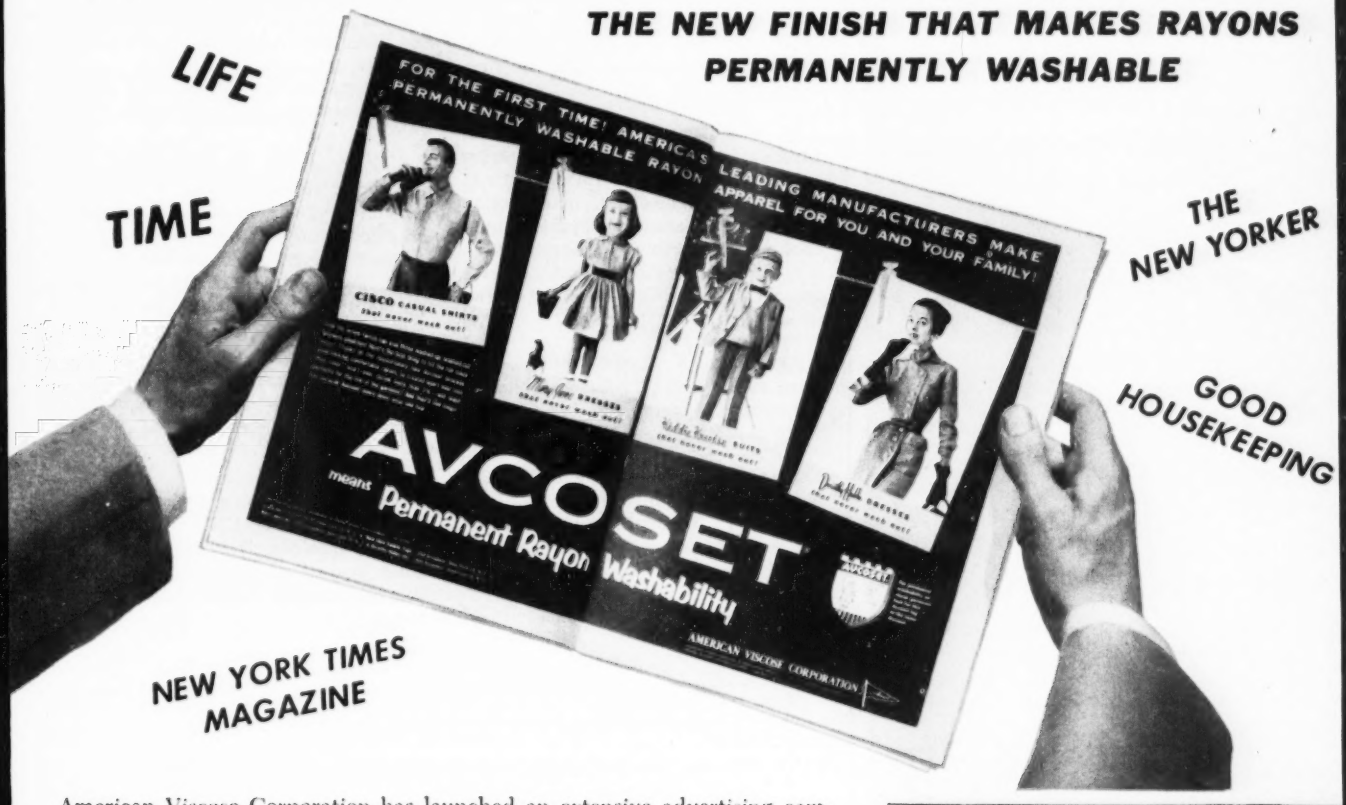
E-Z Mills, Inc., Cartersville, Ga.,

(Continued on page 221)

Rayon Reports

Prepared Monthly by American Viscose Corporation, New York, N.Y. OCTOBER, 1939

Big Consumer Promotion Drive for Avcoset*


THE NEW FINISH THAT MAKES RAYONS PERMANENTLY WASHABLE
LIFE
TIME
THE NEW YORKER
GOOD HOUSEKEEPING
NEW YORK TIMES MAGAZINE
FOR THE FIRST TIME! AMERICA'S LEADING MANUFACTURERS MAKE PERMANENTLY WASHABLE RAYON APPAREL FOR YOU AND YOUR FAMILY!
CISCO CASUAL SHIRTS
AVCOSET
meant Permanent Rayon Washability
AMERICAN VISCOSE CORPORATION

American Viscose Corporation has launched an extensive advertising campaign, coupled with a complete merchandising program, telling the advantages of Avcoset fabrics to the national consuming public.

A two-page spread in the September 14 issue of Life opened the campaign. In all, eighteen advertising pages will appear in Life, Good Housekeeping, Time, The New Yorker, and The New York Times Magazine.

The advertisements feature Avcoset garments of eighteen manufacturers, including men's sports shirts, slacks, pajamas and robes, boys' wear, women's dresses, blouses, and sleepwear, and little girls' dresses.

American Viscose is backing up this advertising with a complete merchandising program. It is supplying manufacturers with hang tags to cover initial quantities of merchandise offered. In addition it is distributing selling kits that include display cards, window display suggestions, sales training booklets and statement enclosures. Mats are available for newspaper advertisements by local stores carrying the merchandise. A complete publicity program, including a special kit for women's clubs is planned.

The entire campaign is emphasizing that the Avcoset label assures the consumer that fabrics and garments carrying it are permanently washable for the life of the fabric.

Avisco is licensing the use of Avcoset free, but the licensee must apply the process properly and only to fabrics meeting every requirement of the American Standards Association's standards of washability.

*T.M. for cellulose ether produced by American Viscose Corporation.

MAKE USE OF *Avisco*® 4-PLY SERVICE

To encourage continued improvement in rayon fabrics, American Viscose Corporation conducts research and offers technical service in these fields:

1 FIBER RESEARCH
2 FABRIC DESIGN
3 FABRIC PRODUCTION
4 FABRIC FINISHING

AMERICAN VISCOSE CORPORATION

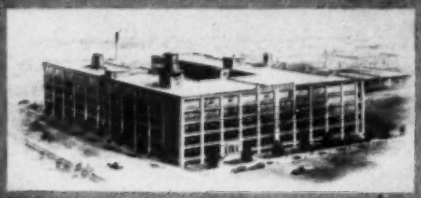
America's first producer of man-made fibers
RAYON ACETATE VINYON* FILATEX®

Sales Offices: 350 Fifth Avenue, New York 1, N. Y.; Charlotte, N. C.; Philadelphia, Pa.; Providence, R. I.

*TMC & CCC

Stehedco
and
Southern

WORLD FAMOUS TRADE NAMES OF THE
STEEL HEDDLE MFG. CO.
and SOUTHERN SHUTTLES DIVISION



2100 W. Allegheny Ave. • Philadelphia 32, Pa.

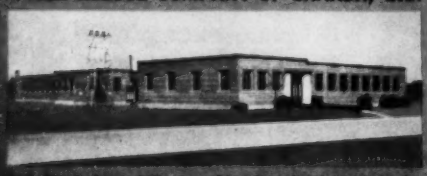
Paris, Greenville, S. C.

Manufacturers of

Flat Steel Heddles • Loom Harness Frames • Loom Reeds (Pitch Band and All Metal, Regular and Stainless Steel Wire) • Loom Harness Accessories • Automatic and Hand Threaded Southern Shuttles (Tempered Dogwood, Persimmon, and Fibre Covered) • Warp Preparation Equipment • Electrode Rods (Fibre and Plastic Insulation) • Drop Wires • Creel Stop Motions • Pigtail Thread Guides • Tension Washers • Light Metal Stampings • Hard Chrome Plating • Hard Chrome Plated Parts • Rayon Cake Holder

268 McDonough Blvd. • Atlanta 1, Ga.

STEEL HEDDLE COMPANY OF CANADA, Ltd.



316 St. Robert Street • Granby, Quebec, Canada

STEHEDCO and SOUTHERN Products
"Weave the World's Needs"

SUPPLIERS News

WHAT THEY ARE DOING

Milton H. Mettee, III, was recently appointed by **American Cyanamid Co.** as branch manager of the metropolitan sales district for the dyestuff department of the Calco Chemical Division. He has been with the firm since 1932.

H. W. Butterworth & Sons Co. has promoted Edward S. Pierce from works manager to general manager in charge of engineering, manufacturing, research and development, purchasing and personnel. George Bromley, previously shop superintendent, has taken over the position of works manager.

American & Efird Mills, Inc., Mount Holly, N. C., has established an export division at the Empire State Building, New York, N. Y.

Yale & Towne Manufacturing Co. has appointed the **Coleman Co., Inc.,** Greenville, S. C., as representative for the sale and service of Yale industrial trucks in North and South Carolina.

Cecil A. Potter, president of the Machinery and Engineering Corp. of Westminster, Mass., has been named general manager of **B. F. Perkins & Son, Inc.** Mr. Potter had been with Duesberg-Bosson of America, Inc., for eight years, and before that with Perkins for more than 17 years.

Alex Rose has been promoted to director of engineering of the textile division of **Celanese Corp. of America.** Succeeding him as plant manager of the Rock Hill, S. C., acetate yarn plant is John P. Loud, formerly special assistant to the plant manager of the Cumberland, Md., plant. Formerly assistant to the president of Angle Silk Mills, Inc., William H. Barnwell is now sales manager of Celanese Venezolana, S. A., with headquarters at Caracas.

Charles T. Hildreth, Jr., formerly with Dan River Mills, Inc., has joined **American Viscose Corp.** as junior project engineer at the Roanoke, Va., rayon plant. Samuel T.

Southern States Dedicates New Facilities

On the occasion of its recent annual company - community picnic Southern States Equipment Corp. dedicated new facilities including a streamlined building which provides 25,000 sq ft of additional manufacturing space.

In the photo below, which was made during the dedication ceremony, are (left to right): Olan Richardson, president of Southern States, and C. W. Walter, sales manager (mechanical); Georgia's Governor Herman E. Talmadge, honor guest and principal speaker; T. A. Burdeshaw, sales manager (electrical) for Southern States; and C. B. McManus, president of the Southern Co.

You Gain

. . . ALL THE ADVANTAGES OF EXPERIENCE, RESEARCH, MODERN DEVELOPMENT AND DESIGN CAN GIVE

It will pay you many times over to consider the benefits available in changing over to the Stehedco Drawtex Frames and Heddles.

Steel Heddle Mfg. Co., universally known for STEHEDCO & SOUTHERN Products that "Weave the World's Needs", in close cooperation with Barber Colman, has developed through its years of experience, and constant research, the *proper* harness for use with Warp drawing in equipment.

Exclusive Steel Heddle Features bring you . . . Freedom from Warp Streaks caused by Harness . . . Longer Heddle Life . . . Fewer seconds . . . Less Harness Adjustment in Looms with Greater Production and Versatility for both heavy and light yarns.

For complete information consult our staff of Field Engineers.

PERTINENT FEATURES YOU PURCHASE . . . AND ONLY SUPPLIED WHEN STEHEDCO IS SPECIFIED.

1. A Heddle made of tempered steel to give Maximum Life so designed that Fatigue Failure is eliminated. Can be furnished in either Carbon Steel properly plated or Stainless. Stehedco Drawtex Heddles are made of tempered steel approximately 7/32" in width to give ample room for selector or keyhold. Cut out at side to reduce weight and resistance to turning when picked off by turning worm and twisted into its proper location for needle to enter eye.

2. A spring effect in each Heddle so release from selector rod of drawing machine is positive. This also speeds up hand entering for those mills not using automatic drawing equipment.

3. Maximum bearing surface, plus ease of assembly with latest Stehedco designed rod support.

4. A simple and effective means for locking Heddle Rod in place and to provide proper tension. Accuracy and close inspection in manufacture assures perfect performance in entering machine.

5. A specially designed Hook for double bar construction where this type Harness is required. This provides a substantial bearing surface for all contacting parts so wear is practically eliminated.

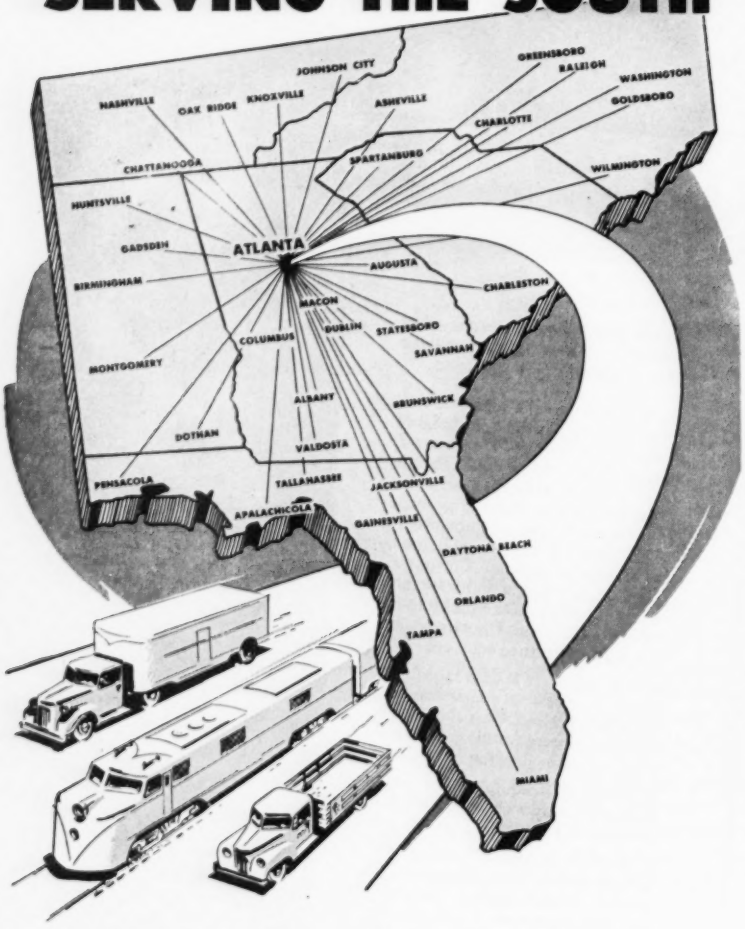
Stehedco and Southern
WORLD FAMOUS TRADE MARKS OF THE
Steel Heddle
Mfg. Co.

STEEL HEDDLE MFG. CO., 2100 W. Allegheny Ave., Phila. 32, Pa.
SOUTHERN SHUTTLES Paris Plant . . . Greenville, S. C.
A Division of STEEL HEDDLE MFG. CO.
STEEL HEDDLE COMPANY OF CANADA, LIMITED
310 St. Hubert Street • Granby, Quebec, Canada

Other Plants and Offices:
Greenville, S. C. • Atlanta, Ga., • Greensboro, N. C. • Providence, R. I.
Textile Supply Co., Dallas, Texas • Charles H. Dunker Co., Los Angeles, Calif.
Albert R. Breen, Chicago, Ill.

1-0-17

SERVING THE SOUTH



STEEL IN A HURRY—WAREHOUSE TO YOU

15 main railroad lines and 75 major motor freight lines operating out of Atlanta enable us to make most deliveries of items in stock within 24 to 48 hours—many in less time!

Our new warehouse was constructed with service foremost in mind. Rail sidings come right into the building. Self-leveling docks speed the loading of trucks.

When you want steel in a hurry—a single piece or a car-load—write, wire, or telephone and let us show you why more and more users of steel are depending on our Warehouse Division to meet their needs.

AMERICAN STEEL WAREHOUSE ASSOCIATION — BETTER DISTRIBUTION

Service In Step With Southern Progress

WAREHOUSE DIVISION

Atlantic Steel Company

ATLANTA, GEORGIA • EMERSON 3451

SUPPLIERS News — WHAT THEY ARE DOING

Moore, Jr., has been appointed a rayon salesman in the Providence, R. I., office. The firm has licensed Rosewood Fabric Corp. to convert rayon fabrics under the Avcoset program. Two spring sports shirtings, Rose Mesh and Rose Fleck, will be marketed under this label. The Avcoset program for quality control of washable rayon fabrics is being given eighteen pages of national advertising in five national magazines, the first having appeared in the September 14 issue of "Life."

Edwin H. Ely has succeeded Fred P. Brooks, retired, as representative for **Foster Machine Co.** in Georgia, Tennessee, Alabama, Mississippi, and

Mr. Ely

western South Carolina. Mr. Ely's headquarters are at 2412 Juanita St., Decatur, Ga.

The **Baker-Raulang Co.**, Cleveland, Ohio, is celebrating its 100th anniversary this year. Beginning with a one-man wagon repair shop in 1853, the firm has grown into a two-billion-dollar materials handling industry.

The industrial wheel and caster line manufactured by the **Kilbourne & Jacobs Co.** of Columbus, Ohio, has been purchased by the **Bassic Co.**, Bridgeport, Conn., a division of the Stewart-Warner Corp.

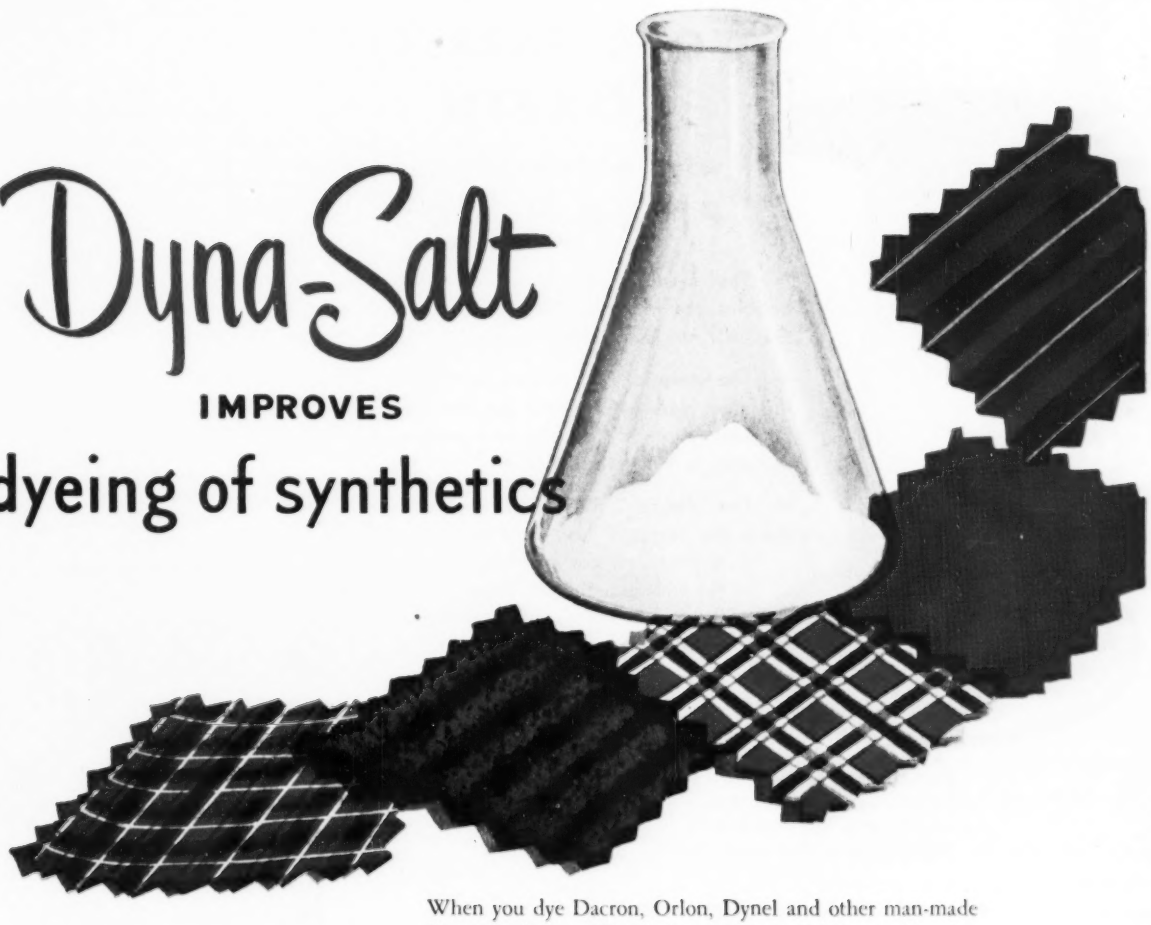
Brush Electronics Co. has appointed J. P. Arndt, Jr., assistant general sales manager in charge of staff functions. He succeeds A. J. W. Novak, now head of all line sales activities.

Carbide and Carbon Chemicals Co. is increasing the production capacity for Dynel staple fiber at South Charleston, W. Va., from four to five million pounds a year. Production of Vinyon N continuous filament yarns

Dyna-Salt

IMPROVES

dyeing of synthetics



When you dye Dacron, Orlon, Dynel and other man-made fibers — alone or blended — use Dyna-Salt in conjunction with Dynadye-V. You'll get better results than you've ever gotten before.

Dyna-Salt, a readily soluble, white, 100% active powder lowers pH to maximum efficiency when used with Dynadye-V, a solubilized substituted phenol with excellent wetting and penetrating qualities. Dyna-Salt stabilizes the bath without the use of strong acids. It's safer for your workers. It's safer for your fibers. It releases its acidity very slowly, gives you greater bath control and greatly improves dye leveling properties. It lessens the chance of scum or "lake" formation, prevents decomposition of dye-stuffs.

Dyna-Salt, in conjunction with Dynadye-V, may be used with Azoic and Acetate colors — assures true deep shades, rich, even colors. Get the full story — write for technical data sheets, or call the Amalgamated Representative.

Southern Division:
1819 Spring Garden Street
Greensboro, N. C.

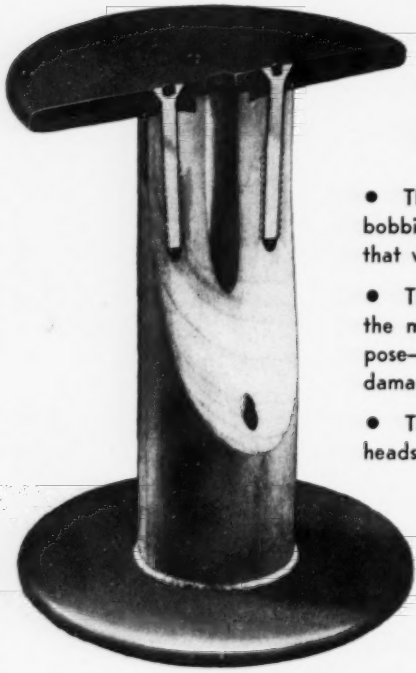
Export Agents:
Tiona Petroleum Company
1015 Chestnut Street
Philadelphia 7, Pa., U.S.A.

AMALGAMATED CHEMICAL CORP., Philadelphia 34, Penna.
Ontario and Rorer Streets
Hosiery and Fabric Finishes, Dyeing Assistants and Scouring Agents

Amalgamated

LESTERSHIRE

WOOD BARREL BOBBIN with REPLACEABLE FIBRE HEADS



- The barrels of these Lestershire bobbins are of hard close grain maple that will not dent, chip, or crush.
- The heads, of hard vulcanized fibre—the most durable material for the purpose—may readily be replaced without damage to the head or barrel.
- The "Anchor Screws" with which the heads are fastened to the barrel are of a patented design that makes a far stronger bobbin. Loosening of the heads under severe conditions is prevented.

Bobbin sliced to show how the shallow thread non-tapered "anchor" thread screws grip the wood with minimum disturbance of the wood fibers.

These special "anchor thread" screws maintain maximum holding power. The shallow threads do not disturb the grain of the wood as ordinary screws will do.
***Four* anchor screws hold *three times* better than *eight* drive nails.**

LEARN NOW HOW LESTERSHIRE SPECIAL BOBBINS WILL IMPROVE YOUR PRODUCTION!

LESTERSHIRE SPOOL & MFG. CO.

DIVISION OF NATIONAL VULCANIZED FIBRE COMPANY

140 Baldwin Street **Johnson City, N. Y.**

BRANCH OFFICES AND TECHNICAL SERVICES:

NATIONAL VULCANIZED FIBRE CO.

New Haven, Conn.
Chicago, Ill.
Baltimore, Md.
Philadelphia, Pa.
Detroit, Mich.
St. Louis, Mo.
New York, N. Y.
Rochester, N. Y.
Cincinnati, Ohio
Cleveland, Ohio
Pittsburgh, Pa.

GREENVILLE TEXTILE SUPPLY CO.
Greenville, S. C.

ODELL MILL SUPPLY CO.
Greensboro, N. C.

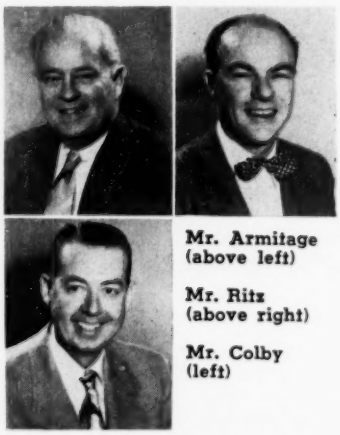
NATIONAL FIBRE CO. OF CANADA, LTD.
Toronto, Ontario

SUPPLIERS News — WHAT THEY ARE DOING

has been discontinued to provide room for the increased production of Dynel. Users of Vinyon N filaments are being assisted in diverting their requirements either to Dynel staple or other continuous filament yarns.

B-I-F Industries, Inc., is the name now given to Builders Iron Foundry and its various subsidiaries.

Kenneth N. Warner has joined the research department of **Emery Industries, Inc.** He was formerly associated with National Aniline and B. F. Goodrich Co. Harry D. Armitage of the New York Office is district manager at large. James W. Ritz, previously head of the Philadelphia office of the firm, has become eastern dis-



Mr. Armitage (above left)

Mr. Ritz (above right)

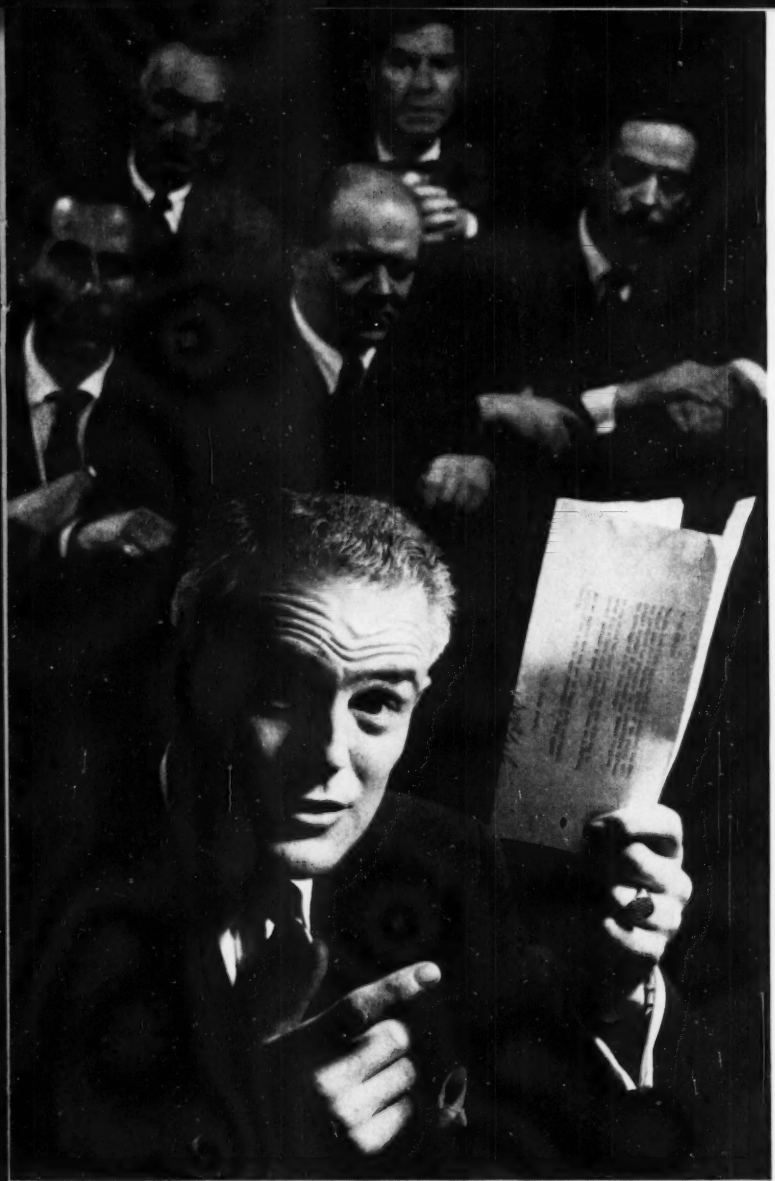
Mr. Colby (left)

trict manager. Willard A. Colby has been named southern district manager, with offices in Charlotte, N. C. Two new men assigned to his district are E. W. Sack and C. T. Burgess. N. F. Reinert has been transferred from Chicago to the eastern district. He has been replaced by W. J. Ryan.

Ralph D. Parker was recently elected president of **Canadian Nickel Co., Ltd.,** a subsidiary of **International Nickel Co., Inc.** He has been with the firm since 1928.

Chain Belt Co., Milwaukee, Wis., has purchased **Shafer Bearing Corp.,** Downers Grove, Ill., and will operate it as the Shafer Bearing Division of Chain Belt. No change has been made in management responsibility. The firm has also opened a Phila-

(Continued on page 223)



"MODEL STAR" GATE VALVE *(Fig. 1793)* for 125 pounds W.P. Iron body, bronze mounted. Supplied with taper solid wedge. Sizes 2" to 30", inclusive.

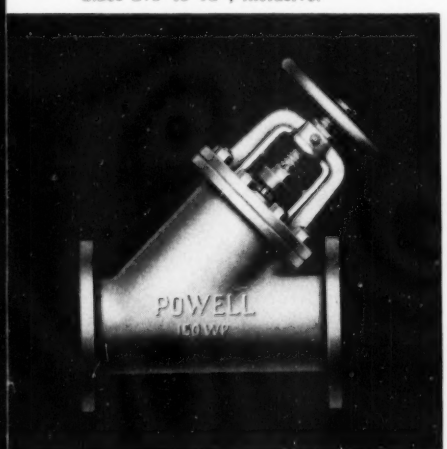
AN OPEN AND SHUT CASE

All the evidence is in. Powell Valves have a record of dependability since 1846. Powell makes more types of valves, has probably done more valve research and solved more valve problems than any other organization in the world.

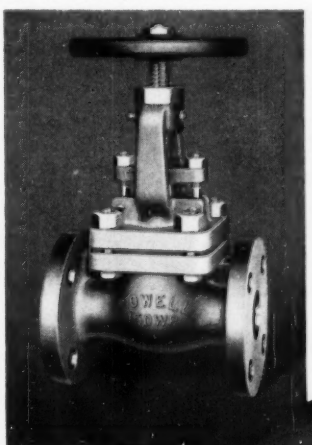
On the basis of such overwhelming evidence, can your verdict be anything but a decision in favor of Powell Valves? See exhibits following.

LUBRICATED PLUG VALVE *(Fig. 2200 SE)* available with Screwed or Bolted Glands. Semi-Steel valves available for 175 and 200 pounds W.O.G. Carbon Steel valves available for 150 and 300 pounds W.P.

O. S. & Y. "Y" VALVE *(Fig. 1944)* for 150 pounds W.P. Stem is threaded, guided, rises through a bronze bushing in upper yoke. Disc can be quickly, easily removed. Sizes 2½"to 12", inclusive.



O. S. & Y. GLOBE VALVE *(Fig. 2475)* for 150 pounds W.P. Bolted flanged bonnet, outside screw stem and yoke. Plug-type disc. Valve sizes are ¼" to 3", inclusive.



DEPENDABLE VALVES SINCE 1846

Powell Valves

THE WM. POWELL COMPANY · CINCINNATI 22, OHIO

THIS WARP PRE-DRYER WILL INCREASE WEAVING AND SLASHING EFFICIENCY!

THE TEXTILE SHOPS' WARP PRE-DRYING MACHINE will increase efficiency in your slashing and weaving operations by drying wet warps prior to sizing.

Stainless steel drying cylinders, 23 or 30 inch diameter, for any steam pressure. ASME Code Construction if desired.

Textile Shops also has a complete line of dust collecting, vapor exhausting and ventilating systems; copper and stainless steel slasher cylinders, dry cans, slasher rolls and size kettles and tanks; card screens, spinning cylinders and quill cans, etc.

Write for complete information.

The Textile Shops

SPARTANBURG, S. C.
U. S. A.

HELANCA YARNS

are made by

DUFFY SILK with the assistance

of

HERR FLYERS

and HERR

CONICAL RINGS

To Obtain Results Like This!

You can easily adapt your present equipment for any textile fiber or blend with HERR Conical Rings. They prevent yarn breakage, give smoother, cleaner yarn, and permit heavier, more uniform doffs. You will have fewer ends down because these rings compensate for and equalize yarn tension variations. No rewicking required.

Specially designed lightweight HERR flyers that are perfectly balanced for accurate yarn control and minimum tension were instrumental in producing this special Helanca yarn in the Duffy Silk Company mill in Buffalo, N. Y.

Do what so many other quality-conscious mills have done — see how HERR equipment increases efficiency — and profits.

Ask for help on your problem.

Pease send us your literature.

NAME..... TITLE.....

COMPANY.....

ADDRESS.....

CITY..... STATE.....

HERR MANUFACTURING CO., INC.

310 FRANKLIN STREET, BUFFALO 2, NEW YORK

FOR SPINNING AND TWISTING, WORSTED, WOOLEN, RAYON, NYLON AND BLENDED YARNS OF ALL TYPES

This extra production

The steady hum of the new "Reading 100" as it knits 100 courses per minute can mean extra profits for you.

It's the fastest multiple-section full-fashioned knitting machine ever built. On 60 and 66-gauge constructions, the new "Reading 100" is operating 25 per cent faster than equipment now in use.

Narrowing speeds of 75 courses per minute are achieved consistently, largely because of the use of end control for the narrowing operation.

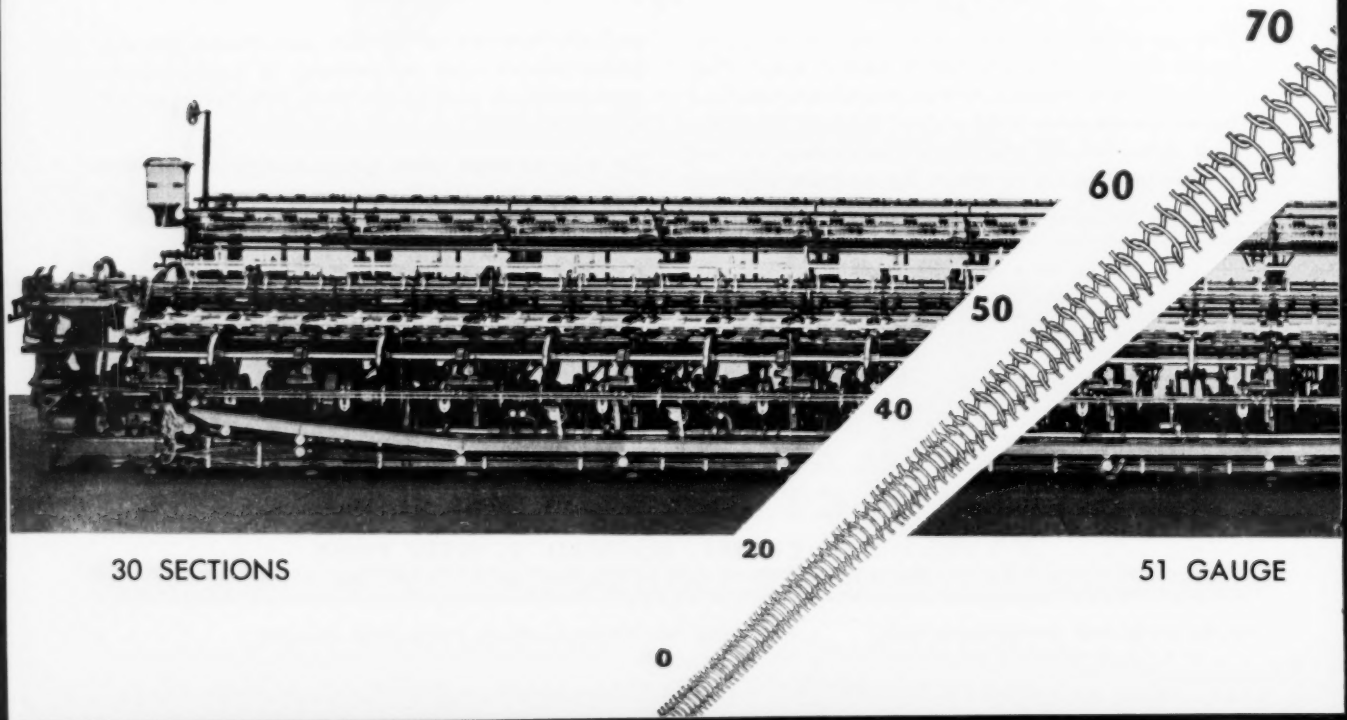
For many years the Reading Full-Fashioned Knitting Machine has been first choice with leading mills around the world. But, leadership imposes responsibilities — in research, in engineering.

Engineers at Textile Machine Works have met this challenge with painstaking research and development. Many of the improvements that are familiar throughout the full-fashioned hosiery industry today were developed and pioneered in our shops.

The new "Reading 100" is the result of ten years of design and development . . . ten years of working to amazingly close tolerances to achieve precise, high-speed knitting performance.

All cam motions are newly designed to permit operation at 100 courses per minute. With the exception of needle bar cams and balancing cams, all cam settings are made with a single gauge, assuring synchronous operation and greatly reducing time required for making or checking settings.

Check your production against the new "Reading 100." Compare results on any basis — courses per minute, dozens per shift, quality of the knitting. Only the "Reading 100" offers you extra production of fine quality full-fashioned stockings. Let us give you full details.



can be yours

100

95

90

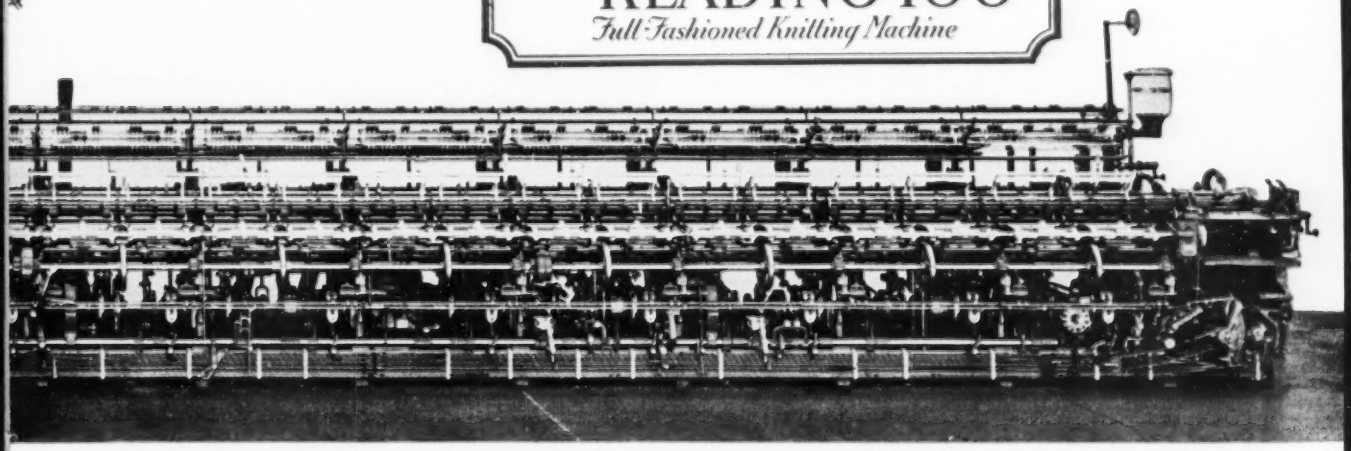
85

80

5

100 courses per minute

The "READING 100"
Full Fashioned Knitting Machine



60 GAUGE

66 GAUGE

TEXTILE MACHINE WORKS
READING, PENNA., U. S. A.

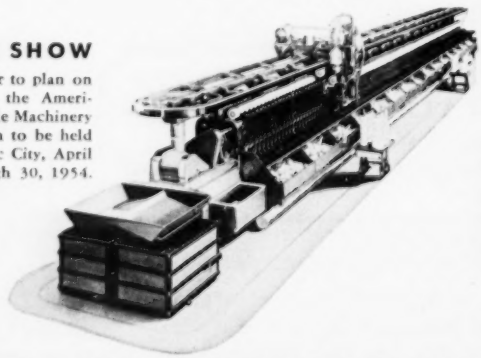
OPERATORS: This machine is

Designed for Convenience...

Operation of the machine is simple: all the operator has to do is to drop the bobbins in the pockets, lay up the ends in the clamps, and replace the full cheeses with starters. For convenience in doing this, (1) the bobbin bins are directly below the pockets so bobbins are ready to hand without stooping, (2) bobbin pockets are positioned and slanted for an easy drop without reaching, as shown in the picture, (3) the thread clamps are right up in front where a natural motion puts the end in place, and (4) full cheeses automatically swing out at about shoulder height where they can be handled comfortably. The trident truck (not visible in the picture) alongside the operator is handy for supply of starters and stacking of filled cheeses, so that little or no lifting or carrying is necessary. *These arrangements are all made with the idea of reducing fatigue to a minimum* so the operator can handle the most ends per minute with the least effort.

1954 SHOW

Remember to plan on attending the American Textile Machinery Exposition to be held at Atlantic City, April 26 through 30, 1954.



BARBER-COLMAN AUTOMATIC SPOOLER

AUTOMATIC SPOOLERS • SUPER-SPEED WARPERS • WARP TYING MACHINES • WARP DRAWING MACHINES

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REPELOTEX

. . . forecasts a favorable climate for more durable water repellency

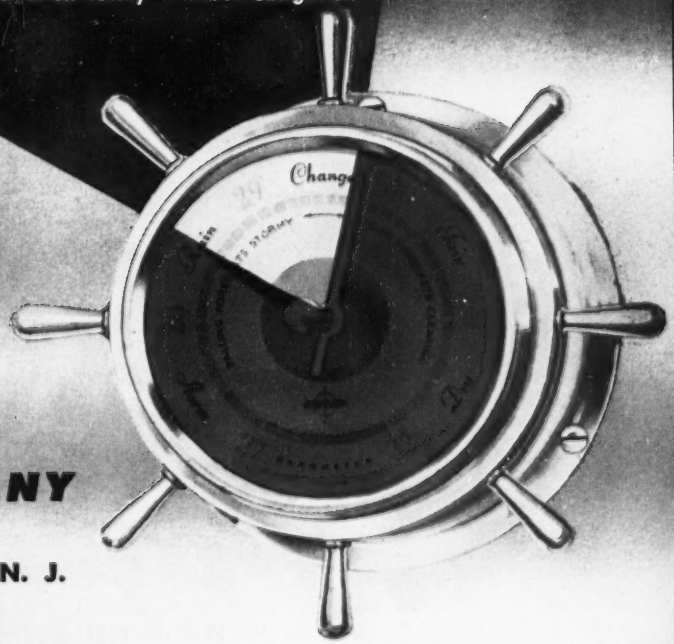
The "life of the fabric" ideal for water repellency is now within reach for practically every fabric with new silicone-based **REPELOTEX ST.**

Remarkably durable and efficient, **REPELOTEX ST** is easily formulated and applied, *at a cost equal to or lower than ordinary non-siliconic types.*

REPELOTEX ST offers innumerable advantages that underscore its economy: practically permanent durability—defying even dry cleaning and laundry soaps; improved strength in resin-treated fabrics; greater sewability; softer hand; resistance to mark-off, and resistance to staining and spotting.

Processors find **REPELOTEX ST** extremely easy to use, readily compatible with resin-treated finishes and without unpleasant odor either during finishing or after curing, requiring no after-wash.

A plant demonstration cannot fail to convince the finisher—**REPELOTEX ST** has been proven in mill use after extensive plant trials. Ask for your demonstration today—without obligation.



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OIL & CHEMICAL COMPANY

TEXTILE DIVISION

WARREN & MORRIS STS., JERSEY CITY 2, N. J.

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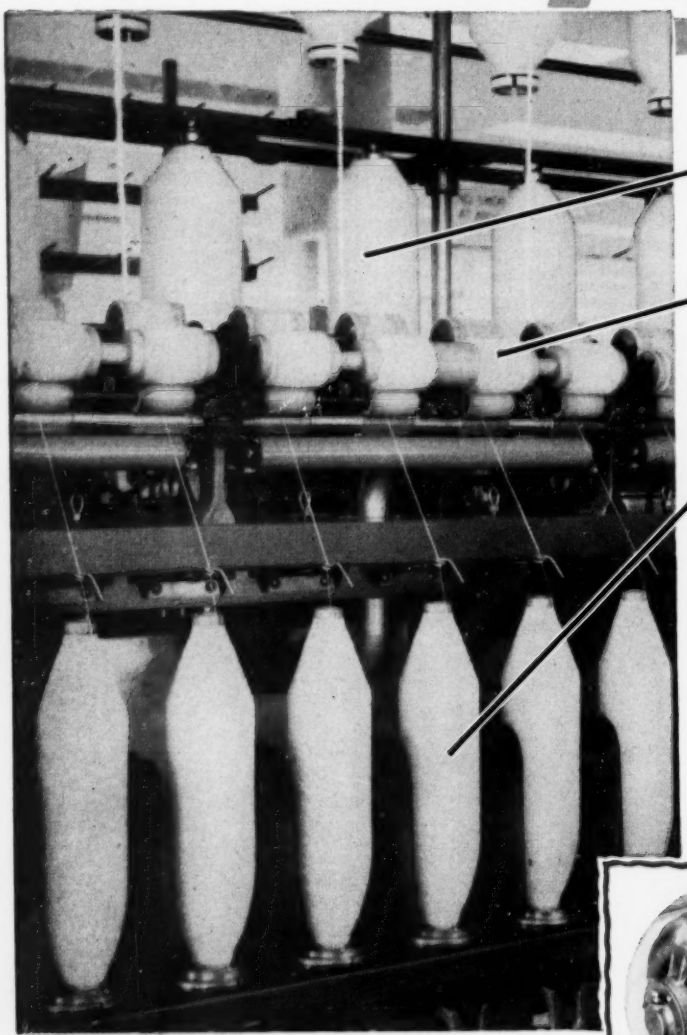
For Export: ONYX International, Jersey City 2, N. J.

for **FLEXIBILITY**

PERFORMANCE

ECONOMY of OPERATION

. . . it's the Whitin Model "F3" large package Spinning Frame



Close-up showing 11" packages of 10's cotton, using 3" ring.

Creel—easily accessible

Standard height creels are easy for the operator to reach, and provide ample storage space on the top deck for roving supply packages.

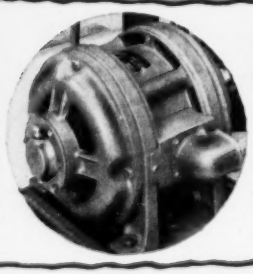
2-apron drafting system

The two apron drafting system, developed, perfected, and used by Whitin for twenty-two years, is recognized as outstanding for fiber control and drafting performance. Highly flexible in range of drafts, it is easy to clean and to operate.

Traverses up to 11"

With traverses up to 11" and packages containing up to 16 oz. on coarse counts, substantial savings in spinning can be made, with equal or superior yarn strength and quality. In addition, sharp reductions in winding costs are effected.

The Whitin F-3 Spinning Frame is designed for spinning large packages at high productive speeds. Its functional design results in minimum expense of installation operation, doffing, creeling, cleaning, lubricating and maintenance. Provision for changing traverse length and ring size has been made to insure its flexibility in meeting present and future mill requirements.



Low power consumption

The standard textile motors used keep installation, power consumption and maintenance costs at a minimum.

Whitin MACHINE WORKS

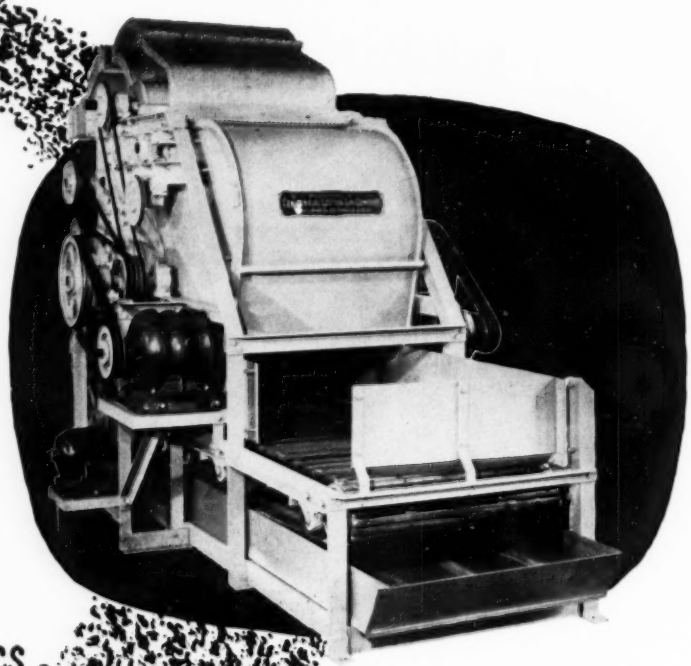
WHITINSVILLE, MASSACHUSETTS

CHARLOTTE, N. C. · ATLANTA, GA. · SPARTANBURG, S. C. · DEXTER, ME.

Fast shades faster
with the Cibalans®
CIBA

THE CEN-TENNIAL OPENER

THE ULTIMATE IN FIBRE SEPARATION



OPENS } COTTON
CLEANS } WOOL
BLENDS } SYNTHETICS

The Cen-Tennial Opener is a product based on research by Southern Regional Research Laboratory and thoroughly proven by mill experience. It reduces waste and neps, increases spinning efficiency and produces stronger and cleaner yarns. Dozens of installations attest to these results.

CEN-TENNIAL
COTTON GIN COMPANY

Columbus, Georgia

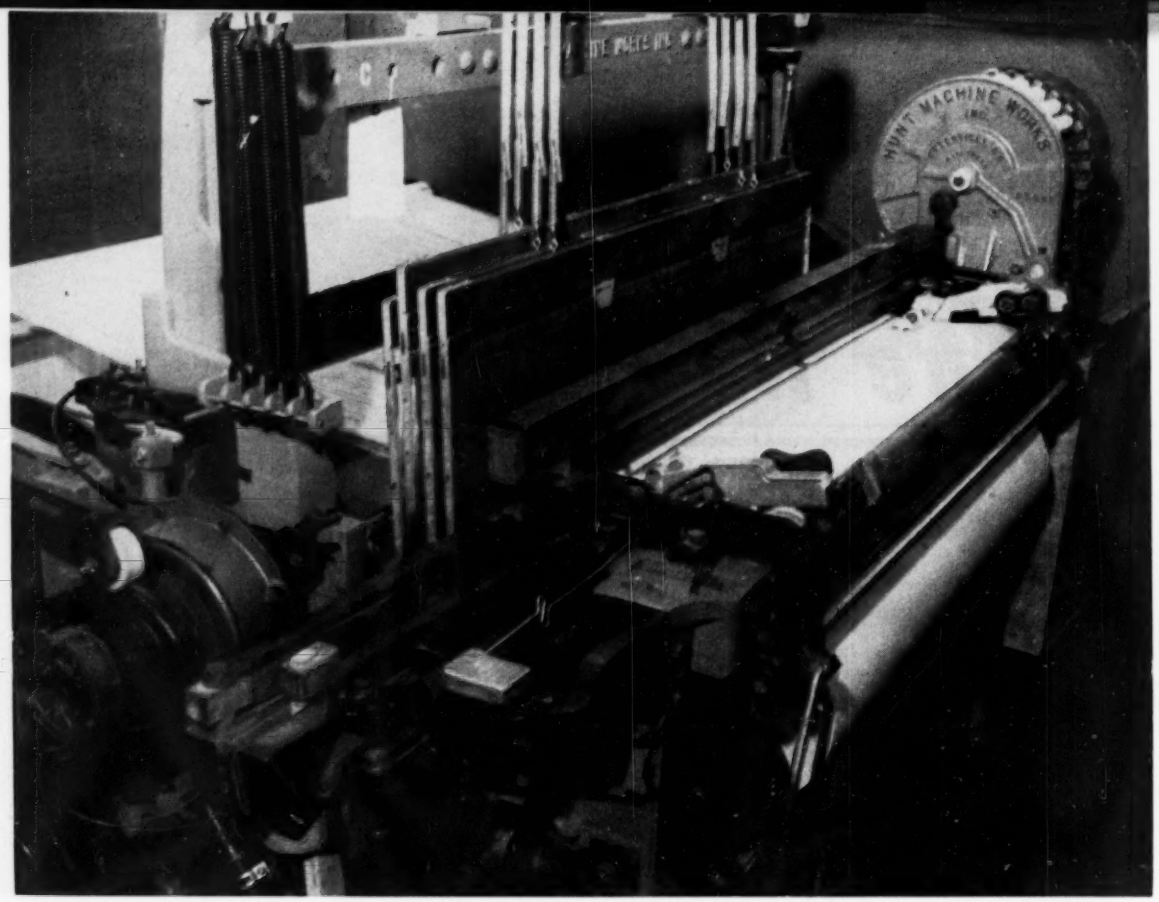
The New Hunt

HB3 Loom

- 208 picks per minute
- Stops with shuttle in box—shed open on filling break
- Stops with harness level on warp end break

featuring:

Sealed anti-friction bearings • Warner electric drive with push button operation • Nylon gears • Close tolerance machining • Fewer parts • Plated cams



HB3 LOOMS have been in operation at Borden Mills Inc., Kingsport, Tenn., with stop and start attachment and a counter, for a recorded 176,740 stops and starts (equivalent to 50 years operation) with no adjustments and no detectable wear.

The New HB3 Hunt Loom

A New Equipment Announcement

THE HB3 loom developed by Hunt Loom and Machine Works, Inc., in conjunction with Borden Mills Inc. embodies improvements in frame strength, operating speeds, stop motions, reduced frequency of lubrication, and refinements in machining and finish.

HB3 looms have been in operation at Borden Mills Inc., Kingsport, Tenn., with stop and start attachment and a counter, for a recorded 176,740 stops and starts (equivalent to 50 years operation) with no adjustments and no detectable wear.

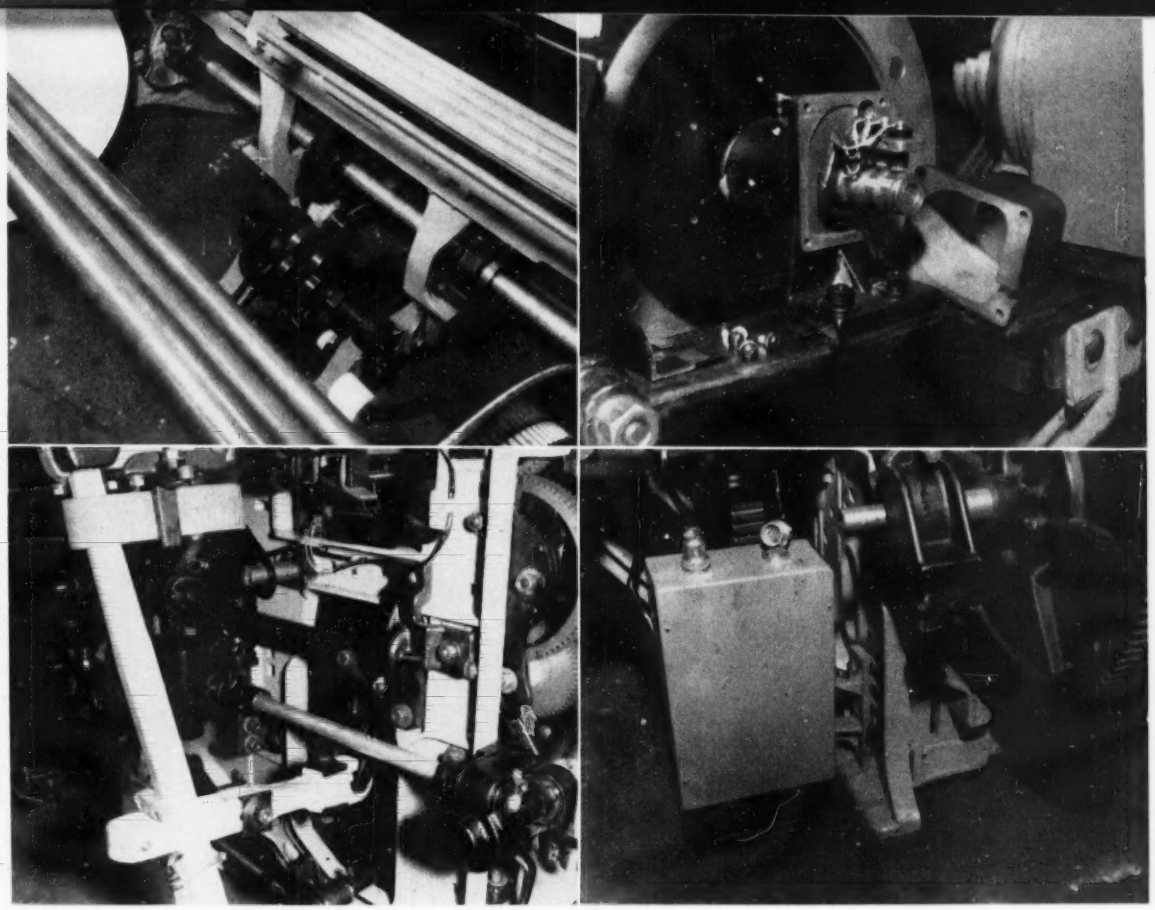
The loom has a heavy frame (each loom side weighs 127 lb). All exposed metal parts, such as temples and feelers, not ordinarily painted are cadmium plated or chromium plated. The handrail and whiproll are chromium plated, and all cams are polished and chromium plated.

There are approximately 55 fewer parts on this loom than on other standard models. Close tolerances are held in machining. For example, tolerance on bearing housings is held to .0005"; bearing races are press fitted; and journals for split bearings are held to .0004" tolerance.

Speeds. The HB3 is designed to operate at 208 picks per minute, plus or minus 15 picks, depending upon loom width and goods woven. 46" models usually operate at 185 ppm; 42" models operate at 214 ppm.

All of these looms are finished with "Hunt blue" baked enamel. The cloth roll is metallized with stainless steel, and the proper "grit" is provided for the cloth to be made on the loom.

Anti-Friction Bearings. Only anti-friction bearings are used throughout the main shafting of the HB3 looms. The bearings are sealed to prevent leakage and need only occasional greasing (once in 1-5 years). Results are: no grease on cloth, reduced friction in driving the loom, no wear at bearings or main shafts, and the lay is easy for the weaver to move. Anti-friction bearings are employed at the following locations: four main bearings on the crank shaft and both journals, and pin ends at sword, four camshaft bearings, rocker shaft, beam locks, No. 4 Bartlett



NYLON GEARS are employed so that metal gears do not mesh (upper left). Cam followers are also nylon. The timer (upper right) has a segment for setting the filling stop circuit; one for setting the warp stop; and one for manual stop. Self aligning roller bearings are used on the pick shaft (lower left). Hunt Loom Control is equipped with Cannon electric plugs for quick disconnect.

let-off, pick shafts, pick-ball bearings, auxiliary shaft bearings, treadle roll bearings, and battery bearings.

A special spreader on this loom is designed to accommodate anti-friction bearings, and all grease fittings on bearings are covered with neoprene nipples for protection. Self-aligning roller bearings are used on the pick shaft, and these bearings are sealed and mounted differently from standard bearings at this location (see photo). Brown spring top is attached to the harnesses, and molded plastic sheaves are used with lubricant impregnated bronze bearings. For example, the warp stop motion is connected electrically to the drive so that the loom is brought to a stop by an electromagnetic mechanism in the drive when an end breaks.

Electric Drive and Brake. All HB3 looms are equipped with the new type Warner electric drives. These drives include a slow speed (900 rpm) motor with 4″ sheaves mounted on the motor shaft to accommodate three narrow V-belts. This arrangement provides a no-slip drive as evidenced by loom starts on front center. Other parts of the drive package include Warner electric clutch and brake, power control panel, and push button stop-start, power on-off. In the event of a slam-off condition, if the shuttle is not in the box, a switch in the electrical system actuates the brake and stops the loom before it slams off.

Push button control permits the weaver to start and stop the loom by simply pressing a button. Electric contact prevents thrust on drive and eliminates wear at this point. An electric brake is coordinated with the electric drive to stop the loom within 1/400 second at any desired position. No adjustment is required on this assembly (called the timer), and its simplicity precludes any maintenance problem.

The timer is located at the fly wheel (see illustration) and simple adjustment makes the loom stop where wanted; however, once this timer is set at the factory, no further adjustment is required. Also, the timer cuts down-time in that the operator doesn't have to release the brake and position the lay before starting the loom again.

The timer has a segment for setting the filling stop circuit; one for setting the warp stop; and one for manual stop. The segments are Micarta with bronze contact points spaced and set as desired (see illustration).

The power panel is called the Hunt Loom Control and is built so that if anything happens in the panel, the power lines may be quickly disconnected by unscrewing the Cannon electric plugs, and the entire panel may be replaced as a unit instead of waiting for repairs to be made. The panel is easily remov-

(Continued on page 69)

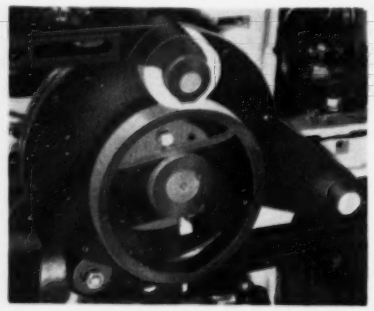
Announcing

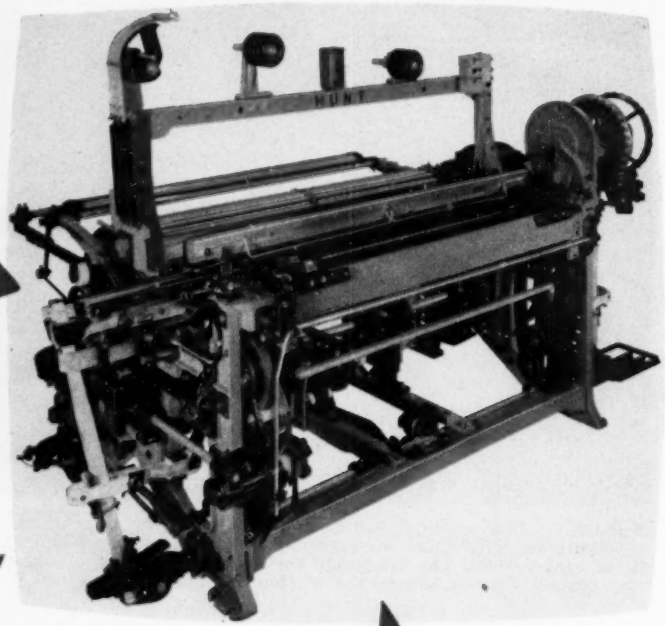
THE NEW HUNT

Completely

ELECTRIC BRAKE

Electric Brake is coordinated with electric drive to stop loom within 1/400 of a second at any desired position. No adjustment or maintenance required.

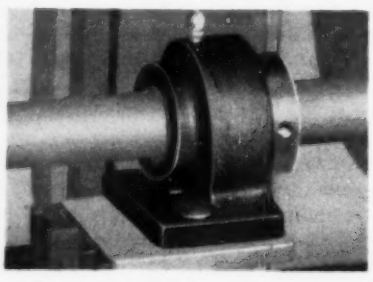




This new HB-3 Loom at Borden Mills, Kingsport, Tennessee, has been operating with an automatic stop and start attachment and a counter for 256,740 stops and starts (equivalent to 50 years operation) with no adjustments and no detectable wear.

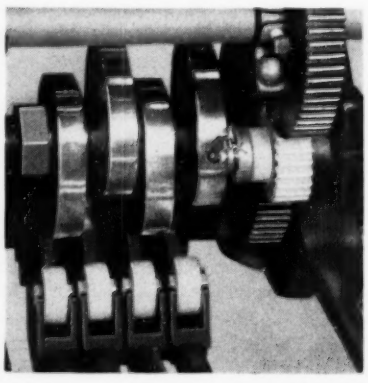
ANTI-FRICTION BEARINGS

Anti-friction bearings are used throughout the main shafting of the HB-3. The bearings are sealed in and need only occasional greasing. Results are no grease on cloth, reduces friction in driving the loom, no wear at bearings or main shafts and ease to the weaver in moving the lay.



OILLESS BUSHINGS AND NYLON GEARS

Oil impregnated bushings throughout and nylon gears against metal gears eliminate all surface oiling and consequently eliminate throwing oil on cloth. These bushings and nylon gears and rolls, because of less wear, reduce parts replacement of the entire loom by 70%.



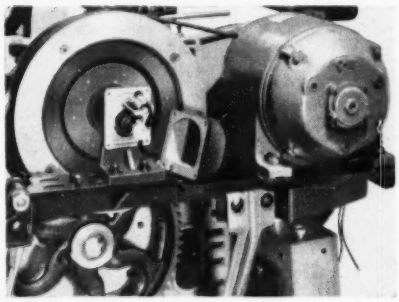
HB-3 LOOM

Automatic!

Stops and starts precisely • No oiling
70% less replacement parts

ELECTRIC DRIVE

With push button control the weaver restarts the loom by simply pressing a button. Electric contact prevents thrust on drive and eliminates wear.



This is the new HB-3 Loom now successfully operating at Borden Mills, Kingsport, Tennessee. A new Warner Electric clutch and brake starts and stops the loom automatically. When a warp end breaks or on a manual stop, the loom stops within 1/400 of a second with the harness level. The weaver restarts the loom by simply pressing the push button. The automatic stop and start attachment eliminates wear on the drive and brake parts.

Anti-friction bearings need only occasional greasing —eliminate grease on cloth and reduce friction in driving the loom. Oil impregnated bushings and nylon gears eliminate oiling and reduce parts replacement by 70%. Nylon gears against metal gears also eliminate wear and lubrication.

The Borden Humidity-Irregularity Minimizer draws the proper humidity through the warp and all lint through the drop wires—keeping the loom and weave room as clean as your own home.

Write, wire or telephone Hunt today for more details on the new HB-3 Loom.

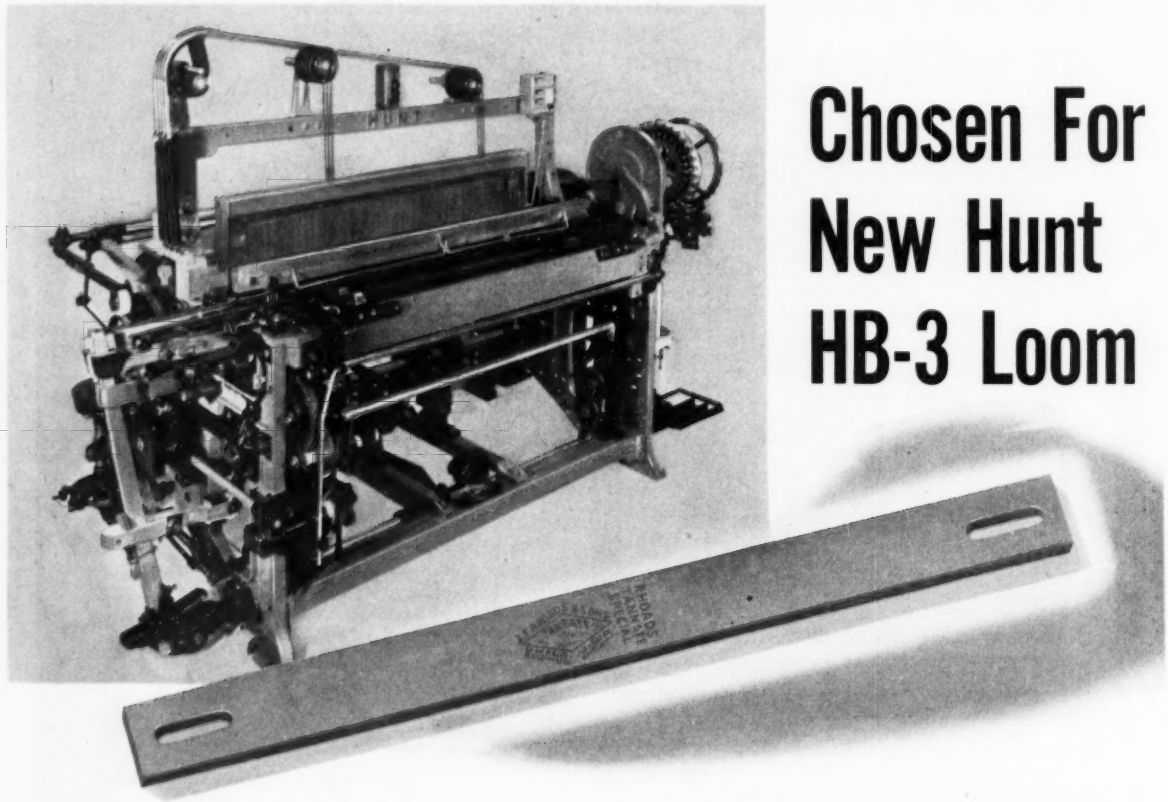
HUNT

LOOM & MACHINE WORKS, INC.

200 ACADEMY ST. GREENVILLE, S. C.

Tannate®

SPECIAL CHECK STRAPS



Chosen For New Hunt HB-3 Loom

Whatever type or make of looms you have in your mill, there is a Rhoads check strap to meet your requirements. In fact, Rhoads offers 42 Varieties of check straps (the patented "BiCut", straight, curved and endless), all because so many different factors influence check strap performance. These factors include the temperature and humidity conditions in your mill, the width of your looms, the cloth being woven, even the personal preferences of your loom fixers.

To further insure your complete satisfaction with our check straps, we maintain our own staff of experienced direct factory representatives in all U. S. Textile centers. So get the complete story on Rhoads Check Straps now, before you place your next order. Then, we believe you'll select Rhoads Check Straps just as did the Hunt Loom and Machine Works.

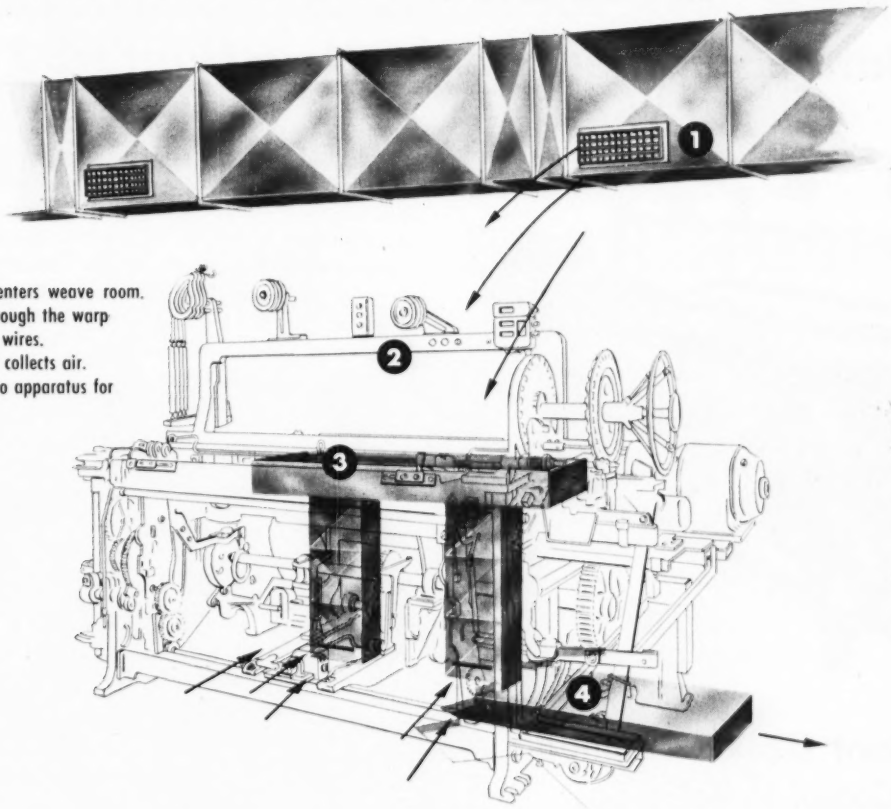
Send for free copy

Send for this folder . . . FREE. Folder Outlines complete specifications for each of the 42 Check Straps Rhoads offers.

RHOADS
INDUSTRIAL LEATHERS

ATLANTA • PHILADELPHIA • NEW YORK • CHICAGO

New Bahnson Air Conditioning "A MUST"



1. Conditioned air enters weave room.
2. Flows directly through the warp yarn at the drop wires.
3. Exhaust chamber collects air.
4. Ducts return air to apparatus for re-conditioning.

Bahnson develops special system for a new approach to weaving conceived by Borden Mills of Kingsport, Tennessee

Cleanliness and the proper moisture content of the cotton warp, with resulting tension regularity, can best be accomplished by proper control of air conditions *at the loom*. Borden designed an air collecting chamber* which runs the width of the loom below the drop wires. The Hunt Loom & Machine Works incorporated this chamber in the new Hunt-Borden 1953 Loom so that all conditioned air will pass directly through yarn.

Bahnson Central Stations deliver conditioned air to the weave room. This air is drawn through the looms at the chamber and is then exhausted, by means of ducts under the floor, and returned to the conditioning apparatus. This system is complete with refrigeration to maintain a temperature of 80°, while relative humidity is held at 70% without supplementary moisture. Aside from the increased efficiency in weaving, the room remains sufficiently dry to prevent sticking of lint. The drop wires require practically no cleaning, and all other weave room cleaning is greatly reduced.

Both Hunt and Borden officials feel that this new approach to the atmospheric control of a weave room is absolutely essential if the full value is to be realized from the operation of this new H-B-3 Loom.

Pioneering new and better ways of air-conditioning for textile mills has been our goal and our accomplishment for 40 years. You can look with confidence to Bahnson for the engineers, the experience, the equipment for the proper solution to your problem.

*Patent Applied For

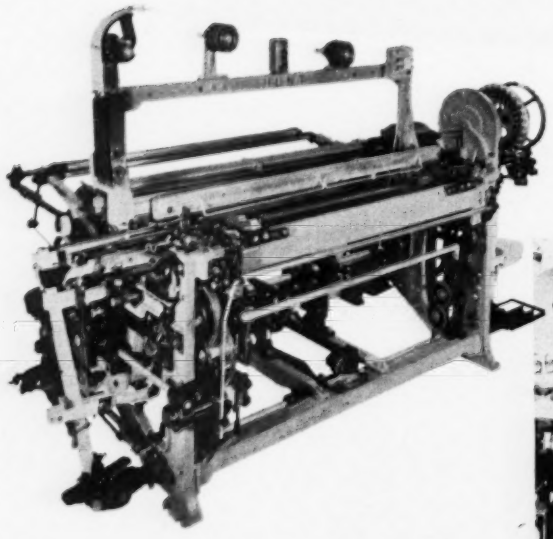
91 OF THE TOP 100

Of the 100 top textile firms in the nation, 91 are users of Bahnson equipment.

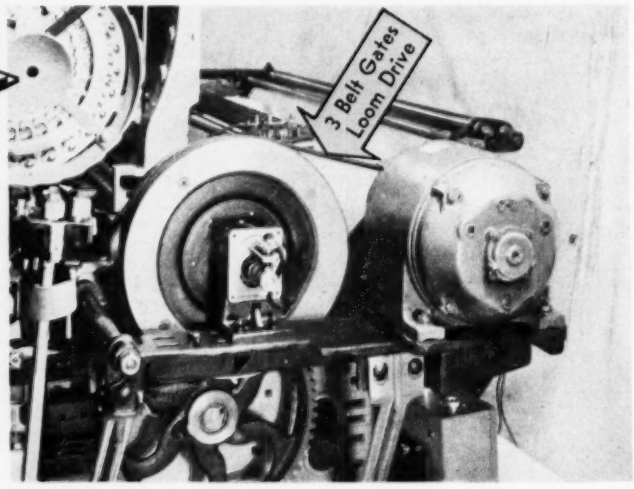
Bahnson Company
ENGINEERS AND MANUFACTURERS
WINSTON-SALEM, N. C.

Gates V-Belt Loom Drive

Standard Equipment on the New Hunt HB3 Loom



When Hunt design engineers began looking for a way to build a cushion into the driving mechanism of the new HB3 loom—a cushion which would help to smooth out the operation of the entire loom — they turned to the power transmission experts of The Gates Rubber Company for the answer. The result was the Gates V-Belt Loom Drive for the HB3 loom—another development in Gates Program of Specialized Research for the Textile Industry.



Why Hunt Design Engineers Chose Gates V-Belts To Drive the HB3 Loom ...

1. Positive, Non-Slip Driving Action

Hunt design engineers knew that with the Gates V-Belt Loom Drive powering the HB3 loom, variations in picks per minute would be virtually eliminated. The positive, non-slip driving action of Gates Loom V-Belts assures more uniform, high grade cloth, and more consistent loom speeds.

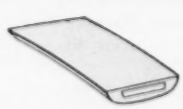
2. Smoother Loom Operation

By making the Gates V-Belt Loom Drive standard equipment on the HB3 loom, Hunt engineers made sure that this new loom would operate with maximum smoothness. The secret is the resilience of Gates V-Belts—their amazing ability to absorb all the shocks normal to loom operation. The result is a cushion in the picking motion, much smoother loom operation.

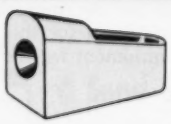
3. Quiet Running

Gates Loom V-Belts move soundlessly in and out of their grooved sheaves. The Gates Loom V-Belts on the new Hunt HB3 loom mean that the vibration and whine of gears (normally a significant part of weave room noise) are eliminated for good.

Gates Textile Products—All Developments of Gates Specialized Research



Gates Cone Belt



Gates Tex-Hide Picker

Gates Tractive-Rib Roll Covering

Gates Tex-Hide Lug Straps

Gates Tex-Hide Harness Strapping

Gates®
The Mark of SPECIALIZED Research

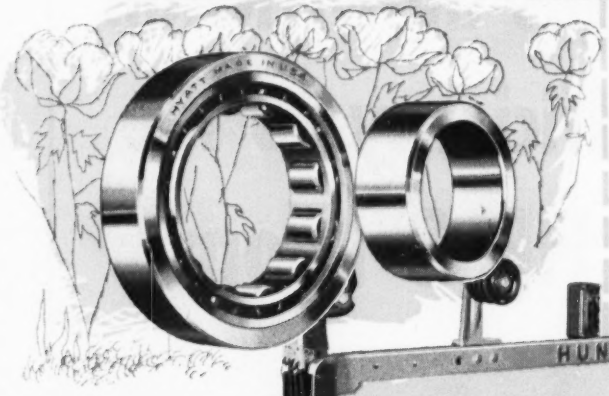
Engineering Offices and Stocks in All Textile Centers

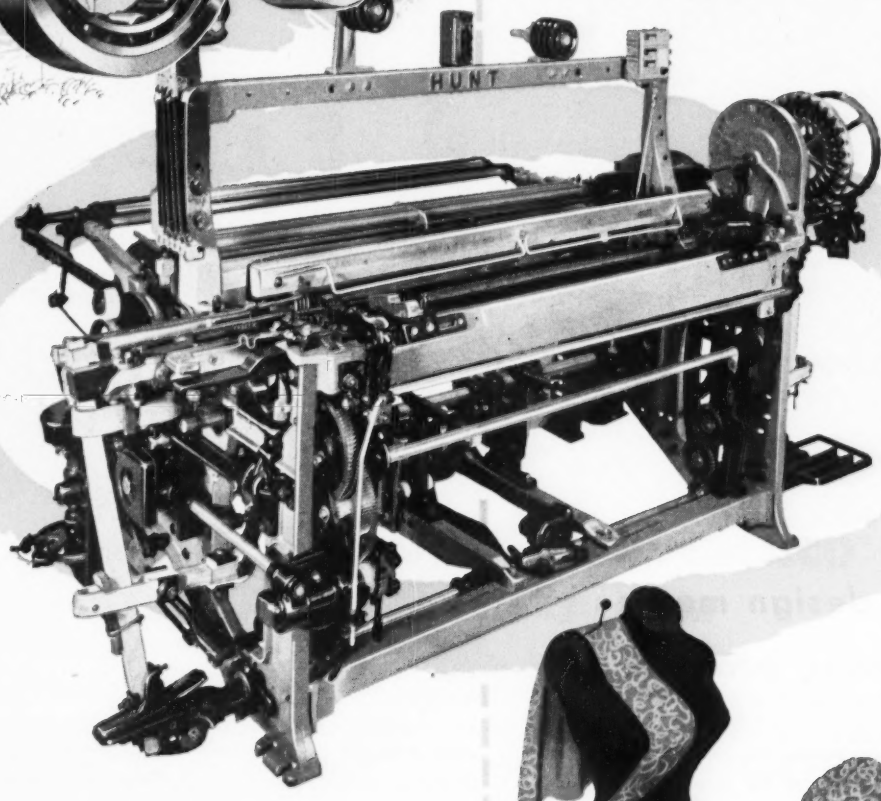
THE GATES RUBBER COMPANY

Denver, Colorado

Another Great Feature of the HUNT H-B-3 . . .

HYATT ROLLER BEARINGS!





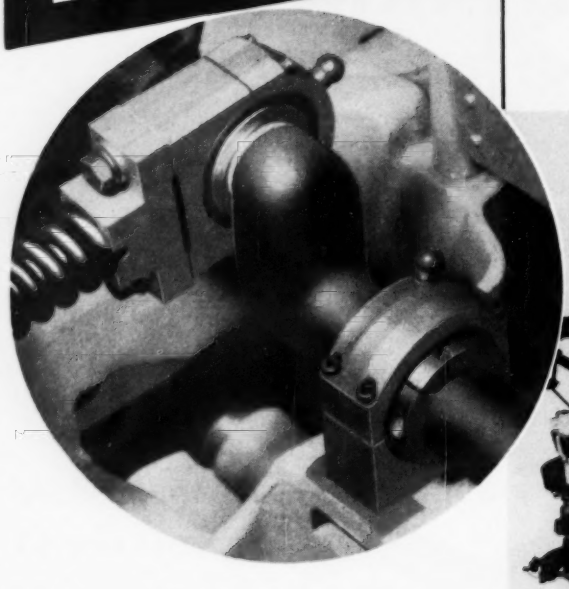
Mill operators who examine the specifications of the new Hunt Cotton Loom will know at a glance that it's built for top performance! *Because they'll see that it's built with Hyatt Roller Bearings!* Hyatts are on the camshaft, crankshaft, pickshaft, whip roll, yarn beam and at other vital positions.

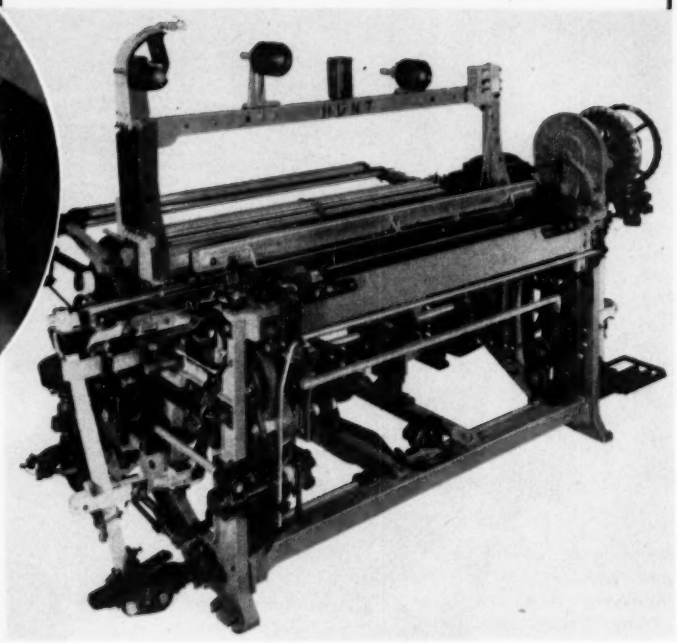
Hyatt Bearings permit the H-B-3 to operate at higher speeds with a minimum of friction and lower power costs; and because the bearing housings effectively retain lubricants during long periods of continuous operation, lubrication costs are also reduced. Positive shaft alignment, the result of Hyatt's precision fit, cuts bearing wear and reduces down time. And as every mill owner knows, sealed, grease-lubricated, Hyatt-equipped bearing housings mean *cleaner* yarn and cloth with a reduction in seconds.

Whether you're buying new equipment or making changeovers, insist on Hyatt Bearings. It's one sure way to cut operating costs and protect your machine investment. Hyatt Bearings Division, General Motors Corporation, Harrison, N. J.

HYATT ROLLER BEARINGS

SPLIT BALLBEARING adds anti-friction efficiency to the HB-3 Loom





Exclusive design meets engineering problem

Specially designed split ballbearing permits use on crank arm and inboard mounting (of the spreader). The HB-3 Loom is the first in history to take advantage of a special bearing that permits cleanliness, avoids down time and gives minimum wear.

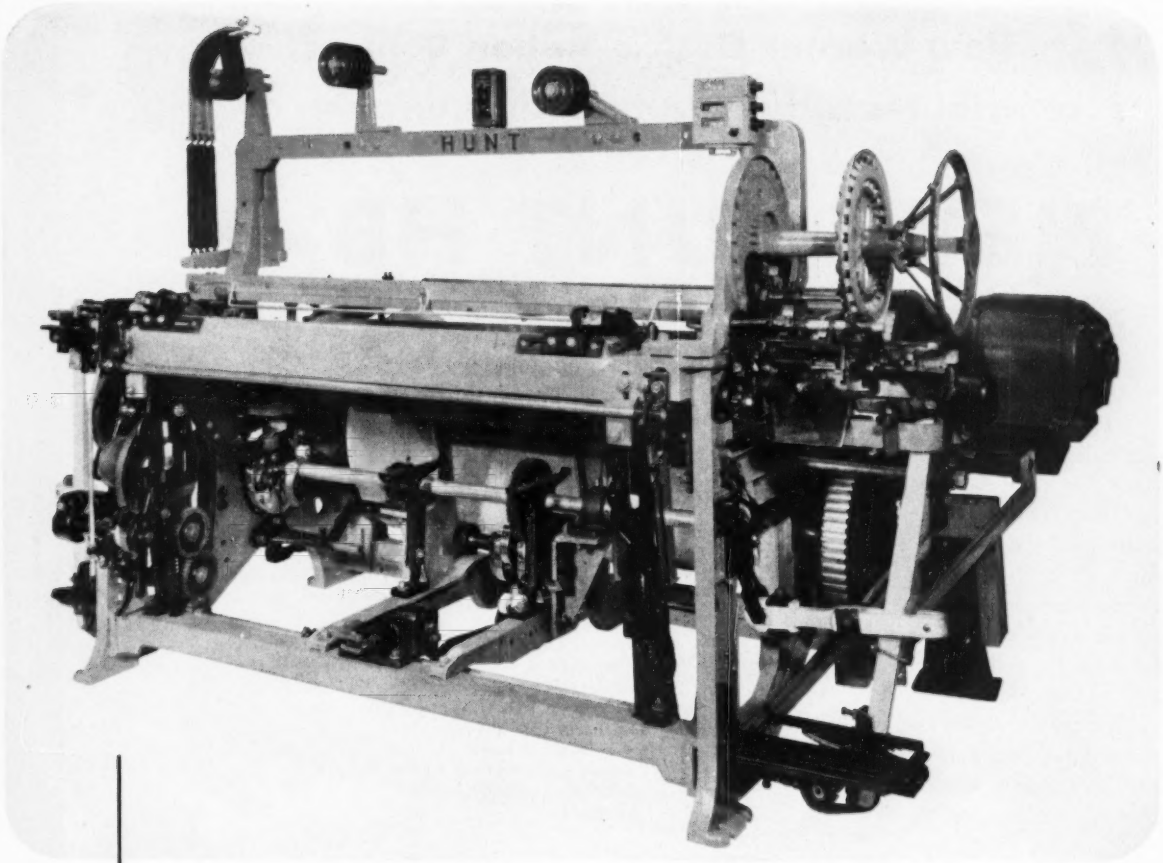
Prelubricated at the factory and sealed against escape of grease, the SPLIT BALLBEARING is a distinct contribution to overall efficiency of operation. Instead of daily lubrication, the SPLIT BALLBEARING will run hour after hour, day after day, month after month without the cost and trouble of oiling. Every maintenance foreman and superintendent knows the problem of keeping oil away from the cloth. Here is a bearing that does exactly that, saving hours and dollars each year. (The throw repeats hour after hour to precision tolerance. A precision ground bearing has replaced a conventional sleeve bushing which formerly required constant oiling and was subject to excessive wear).

We are proud of the fact that after exhaustive tests, Hunt Loom and Machine Works has selected this special bearing, another instance of the progress which the Textile Industry is constantly making.

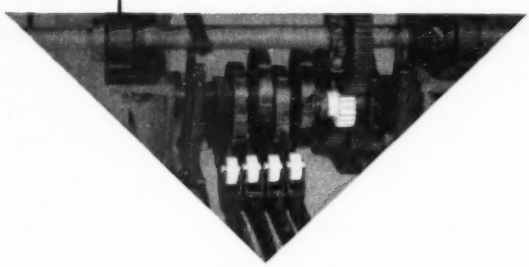
Split **BALLBEARING CORPORATION**

LEBANON, N. H.

Manufacturers of divisible race bearings—single fracture outer type bearings and ball bearing bushings



PARTS MACHINED FROM POLYPENCO® NYLON *ON THE NEW HUNT HB-3 LOOM*



Nylon to metal gears and cam followers require no lubrication—typical of parts machined from POLYPENCO stock shapes for the Hunt HB-3 Loom.

REQUIRE NO OILING—gears, cam followers and bearing surfaces run without lubrication. Lint build-up and oil spotting are eliminated.

REDUCE MAINTENANCE—because of nylon's shock-absorbing resilience, toughness, abrasion resistance and light weight.

You can fabricate parts (drill, tap, thread, mill, blank) readily from standard shapes of POLYPENCO nylon on standard shop equipment.

nylon and teflon* / ***stock shapes and finished parts available to your specifications***

Write for general catalog

*trademark of Du Pont tetrafluoroethylene resin

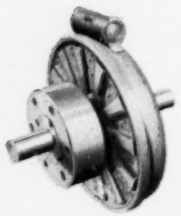
POLYPENCO NYLON

The POLYMER CORPORATION of Penna. • Reading, Pa.

How Warner Electric Motion Control contributes to fully automatic operation of

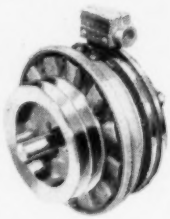
NEW HUNT HB-3 COTTON LOOM

Modern automaticity reaches another milestone in the textile industry with the advent of this remarkable new Hunt Cotton Loom. The loom *starts* (via pushbutton) with the speed of lightning. It *stops* automatically . . . within 1/400 of a second. No notches to engage, no clearances to take up, no solenoids or complicated linkages to slow operation. You increase productivity, decrease maintenance time and costs, provide foolproof control over machine motions, reduce spoilage. Your equipment can be similarly automaticized with Warner Electric Motion Control. For the complete story, contact your nearby Warner representative, or send coupon today.



Warner Electric Brakes are available with static torque ratings from 8 in. lbs. to 700 lbs. ft. Low wattage. Precise adjustment of speed and power. No wear adjustments. Rapid heat dissipation. Compact. Light in weight

Warner Electric Clutches are also available with static torque ratings from 8 in. lbs. to 700 lbs. ft. Even largest sizes require only 25-35 watts of direct current. Precise control of acceleration and power. Automatic wear take-up. Rapid heat dissipation. Easily adaptable.



Warner Electric Brakes and Clutches provide 5 important new features for users of Hunt Cotton Looms

1 *Accurate, prepositioned stops*—if warp end is down, loom stops automatically with the harness level. If a filling breaks, loom stops with shed wide open. Manual pushbutton stop causes loom to stop with the harness level. Result—a lightened work load on the weaver, shorter shut-down time.

2 *Reduced maintenance*—cushioned starts and stops assure long life for all loom components. Acceleration tests indicate life expectancy in excess of 50 years for the Warner Clutch and Brake. Amazingly simple—they never need adjustment.

3 *Fewer mechanical parts* required for starting and stopping motions. Less chances for trouble, lower repair costs, smaller inventory of spare parts add up to more production at higher profit.

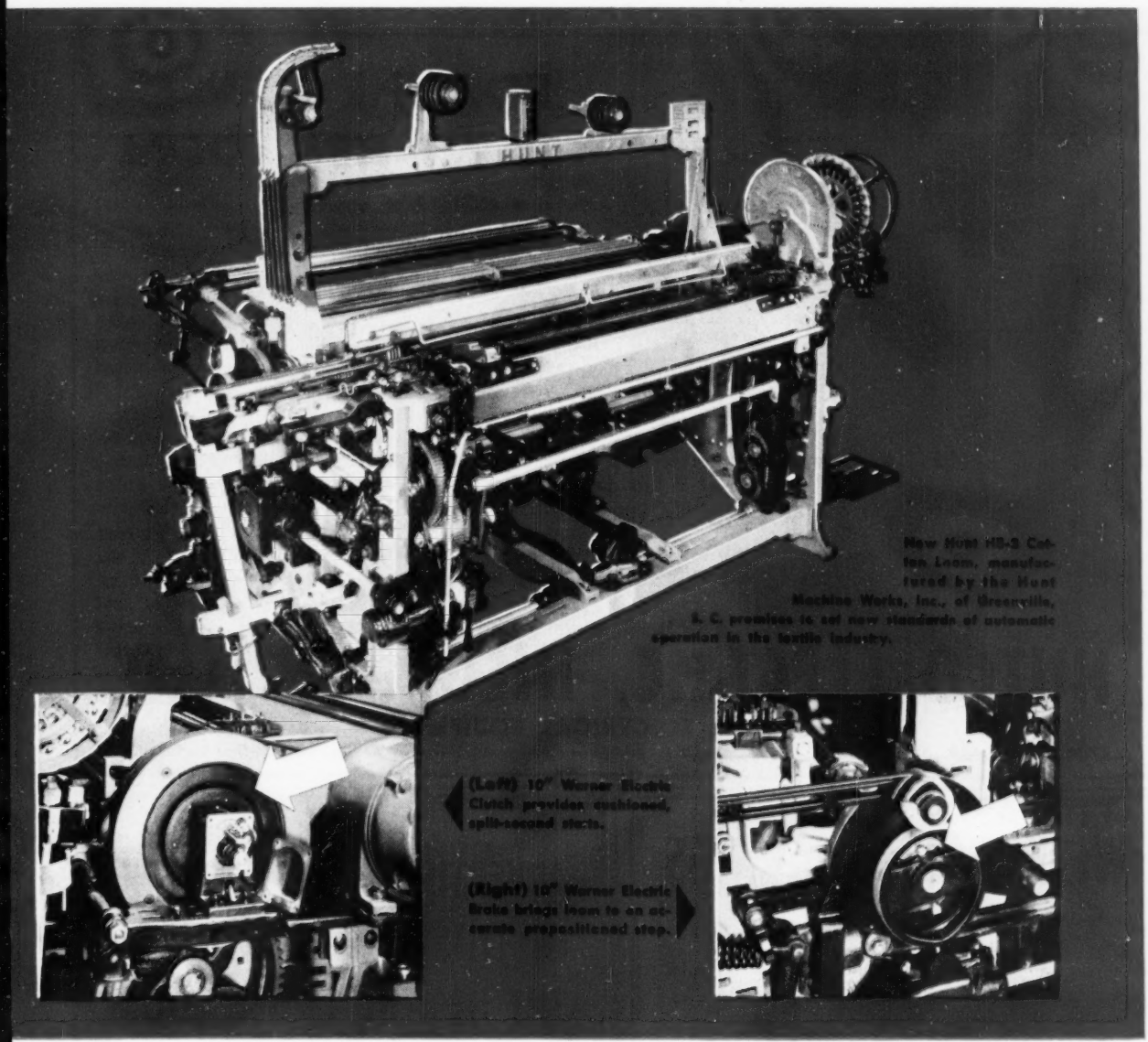
4 *"Inching" the loom* smoothly with pushbutton control is a simple matter, saving the manual labor of turning the handwheel.

5 *Electric signals* to counters help management determine stoppages due to warp preparation and quality, or filling quality.

WARNER

ELECTRIC BRAKES & CLUTCHES

FOR INDUSTRIAL APPLICATIONS



New Hunt HB-3 Cotton Loom, manufactured by the Hunt Machine Works, Inc., of Greenville, S. C. promises to set new standards of automatic operation in the textile industry.

(Left) 10" Warner Electric Clutch provides cushioned, split-second starts.

(Right) 10" Warner Electric Brake brings loom to an accurate prepositioned stop.

Warner Electric Brakes, Clutches and Clutch-Brakes give you new, unique simplicity of design and operation. There are only two main parts, an armature and magnet. Operation is by *electro-magnetic*, instantaneous engagement and release of friction surfaces. Torque ratings are extremely high for their small size and light weight. No coasting or slipping when "locked in." Easily designed into original equipment. Readily adapted to automatic cycles and remote control by limit switches, relays, electric eyes, pushbuttons, etc. Rate of application is accurately controlled to synchronize motions—give exact degree of speed and power required for your machine operation.

CONTROL ENGINEERING SERVICE . . . Warner offers complete application and control engineering service and field assistance. If you have a clutching, braking, tensioning, indexing, or speed-control problem, consult competent, experienced Warner brake and clutch specialists for reliable recommendations on torque, heat, electrical controls, capacity, etc.

NEW CATALOG: 20 pages of facts, case histories, and specifications of Warner Electric Clutches and Clutch-Couplings. Paste coupon to letterhead or post card, and mail today.

Warner Electric Brake & Clutch Co., Dept. TI, Beloit, Wis.

☐ Please send your FREE Booklet, WEB 6089.

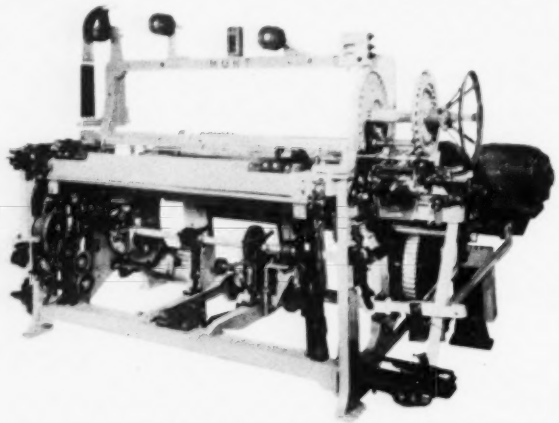
☐ Would like to see working demonstration

Firm Name_____

Individual_____ Title_____

Address_____

City_____ State_____



FOR THE NEW HUNT HB3 LOOM

- CONTROL PANEL
- PUSH BUTTON STATIONS
- POWER WIRING HARNESS
- CONTROL WIRING HARNESS
- LIMIT SWITCHES

HUTCO ELECTRIC, INC. is proud of the part played by their electrical control engineers in the development of the electrical drive so important on the Hunt HB3 Loom.

We feel that this new loom will contribute a great deal to the advancement of the weaving industry thus resulting in benefits for all of us.

GEO. M. COON C. S. COBERT

HUTCO ELECTRIC, INCORPORATED

INDUSTRIAL ELECTRICAL EQUIPMENT

3204 ST. CLAIR AVE. CLEVELAND 14, OHIO

WHIP ROLL BEARINGS

THE HB3 LOOM IS EQUIPPED WITH THE N-5 RUBBER WHIP ROLL BEARING AND SELF-LUBRICATING BRONZE BEARINGS.

INDUSTRIAL ENGINEERING

COMPANY

KERSHAW SOUTH CAROLINA

SUPPLIERS OF DUREX BRONZE AND NOLU OILLESS WOOD SELF-LUBRICATING BEARINGS

ADVERTISERS PARTICIPATING IN THIS DESCRIPTION OF THE NEW HUNT HB3 LOOM

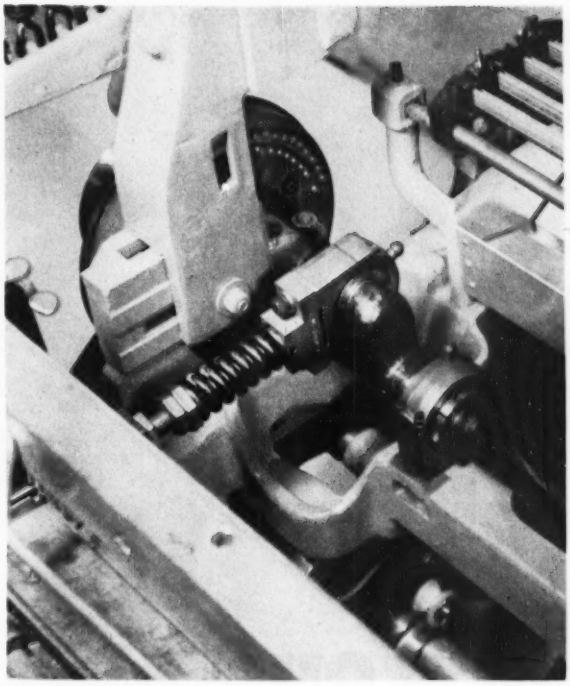
- BABBITT BROS.
- BAHNSON CO.
- GATES RUBBER CO.
- HUNT LOOM & MACHINE WORKS, INC.
- HUTCO ELECTRIC INC.
- HYATT BEARINGS DIV.
- INDUSTRIAL ENGINEERING CO.
- INTERNATIONAL POWDER METALLURGY
- POLYMER CORP. OF PA.
- J. E. RHOADS & SONS CO.
- SPLIT BALLBEARING CORP.
- WARNER ELECTRIC BRAKE & CLUTCH

able from the metal stand to which it is attached by wing nuts.

Oilless Bushings and Nylon Gears. Nylon gears are employed so that for the most part no two metal gears are in mesh. For example, on the take-up motion, every other gear is nylon, and the nylon in contact with metal is intended to relieve the need for external lubrication on these gears. Pick balls are nylon, and treadle rolls are nylon.

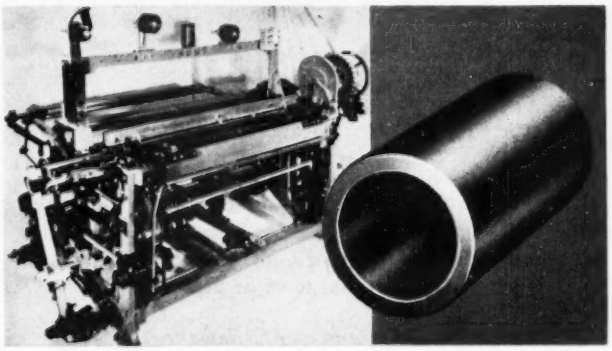
This loom will take up to 16″ roll of cloth on traverse of cloth roll stand. The cloth stand bearings are nylon, the parallel shoe pivot is bushed with nylon, and the filling cam is V-shaped and has a nylon follower. All gears on the loom have machined teeth.

The first large installation of these looms is being made at Borden Mills Inc., Kingsport, Tenn. The Bahnson Co. of Winston-Salem, N. C. worked in conjunction with Borden Mills and Hunt Loom & Machine Works and engineered and is installing an air conditioning system with refrigeration that will maintain 80 F and 75% relative humidity without the use of supplementary moisture in the weave room by having special exhaust hoods (designed by Hunt) located beneath each loom; air from the conditioning system is circulated through the warps and returned through exhaust ducts beneath the floor (see story on Air Conditioning at Borden, pages 144-147 in this issue).



ANTI-FRICTION BEARINGS are used on the crank shaft. Split ball bearings are shown in this closeup.

IPM Bronze Sintered Bearings Impregnated With Special IPM Lubricant



help to improve performance and reduce maintenance cost on the NEW HUNT HB-3 LOOM

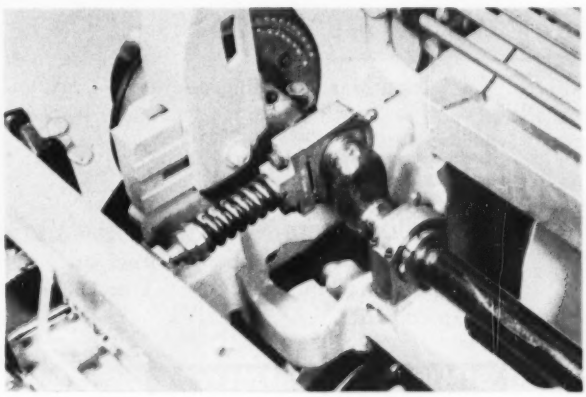
Production controlled to meet specific operating conditions, they have outstanding physical characteristics, are lubricated for life with a non-drip lubricant which was specifically developed by IPM for textile machinery. They are wear-resistant withstand heat, humidity and heavy loads.

Our engineers are always available to show you how you can benefit from the many advantages of IPM sintered metal parts.

Free fact-filled engineers' handbook available to design engineers.

IPM International Powder Metallurgy Co.
439 W. MAIN STREET • RIDGWAY, PENNSYLVANIA

HUNT CHOSE BABBITT

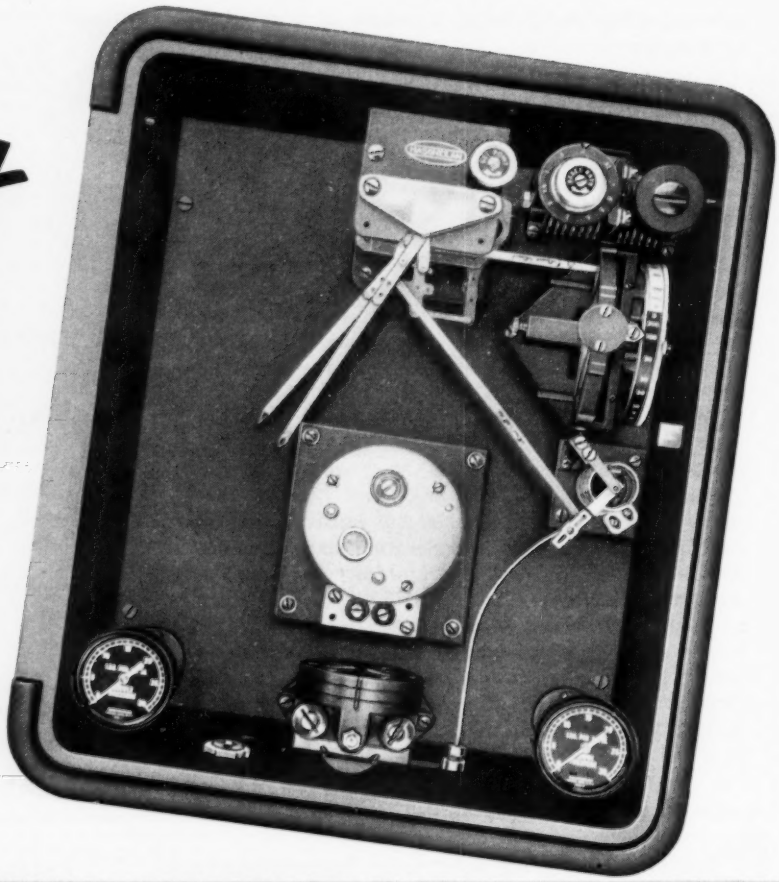


BABBITT LOOM CRANKSHAFTS

Babbitt Crankshafts—a standard for over 60 years—were selected for the new Hunt HB3 Loom because of material and workmanship in keeping with standards throughout this loom.

BABBITT BROTHERS, INC.
FAIRHAVEN, MASSACHUSETTS

See it Work in your plant



Masoneilan 60000 Series Controller

Ask a Mason-Neilan engineer to bring a demonstrator model into your own office or plant — and see the difference. Note these outstanding qualities . . .

GIMBAL UNIT

See how *ONE CONTROL MECHANISM* gives you *FOUR COMBINATIONS* of primary and feedback motion to obtain Direct or Reverse Proportional (includes On-Off), or Differential Gap control.

SIMPLE ADJUSTMENT

Make only ONE SETTING — without removing chart — to select type of control, direction of action, and percent proportional band or differential-gap. See how easy to adjust, test and service, too, because all unit assemblies are directly accessible, easily detached, interchanged. Note how all air passages are manifolded.

STUBBORNLY DEPENDABLE

Accurate, stable performance, plus unequaled simplicity, versatility and reliability make the Masoneilan 60000 Series Pneumatic Controller the *Instrument Man's Instrument* for pressure, temperature, liquid level or flow control.

(Call in a Mason-Neilan engineer at your earliest opportunity)

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REGULATOR CO.
1194 ADAMS STREET, BOSTON 24, MASS., U.S.A.

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NEW COLORS!

for *bright* shades on jerseys of ORLON and wool

A new, w-i-d-e color range is at your command for jersey dresses and sportswear of "Orlon" and wool blends. And the same wide range brings new versatility to woven goods, too.

To get these bright shades in a range of colors from light to dark, Du Pont technical service experts combined their knowledge of newly developed dyes and their experience with similar fiber blends. They worked with the manufacturer right at his mill to develop successful procedures for dyeing this jersey of 80% "Orlon" and 20% wool.

You can take advantage of Du Pont's unique experience as both a producer of dyes and a creator of man-made fibers. Keep in touch with Du Pont for latest developments, and for help on your problems in dyeing any wool and synthetic fiber blend. Write to E. I. du Pont de Nemours & Co. (Inc.), Dyes and Chemicals Division, Wilmington 98, Delaware.

ORLON is Du Pont's trade-mark for its acrylic fiber

Du Pont Dyes

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

air conditioning

helps older mills keep up with the modern ones

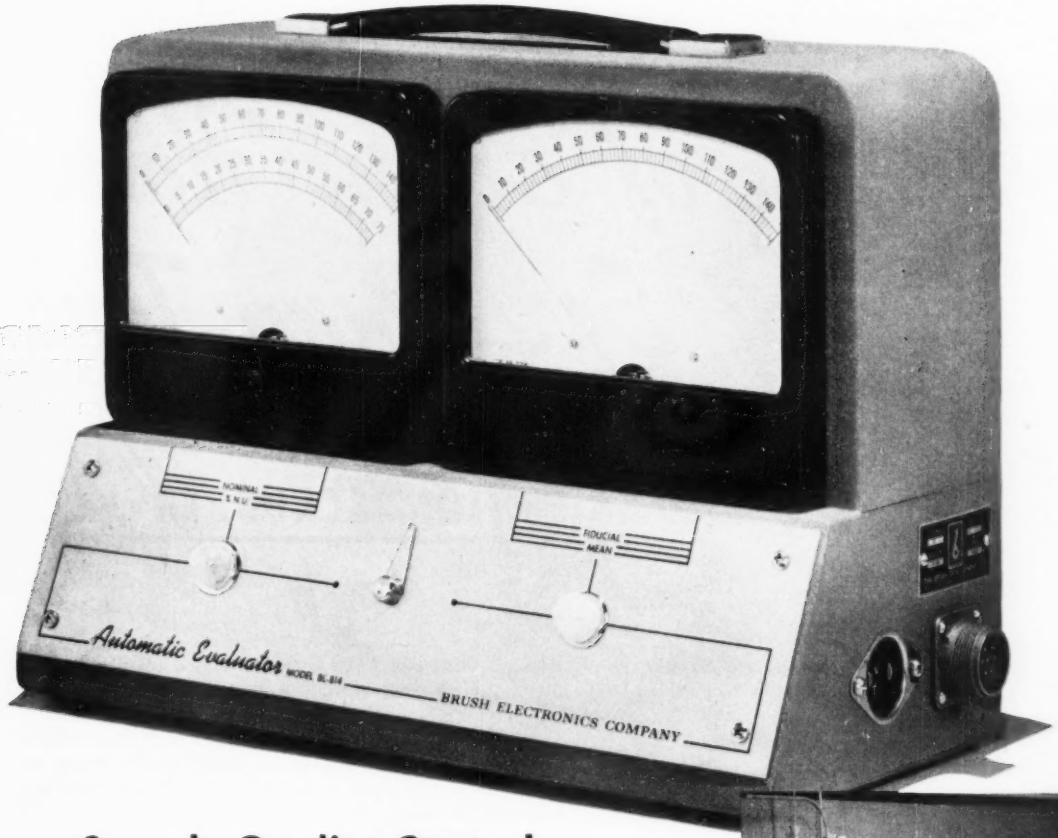
In years, Judson Mills at Greenville, S. C., is not a new plant. In efficiency, it's right up with the newest ones. One way Judson has accomplished this is by improving its air conditioning, step by step, over a period of 12 years: **1941**—four central station systems for evaporative cooling in the main weave room. **1945**—a new evaporative cooling system for the combination throwing department and the basement weave room. **1947**—the first air conditioning with refrigeration for two twisting rooms. **1948**—another system with refrigeration for the utility department. **1949**—refrigeration for the basement weave room system. **1950**—a central station system including refrigeration for the cotton department. **Today**—Judson Mills has a grand total of 3098 tons

of refrigeration, supplied by four Carrier Centrifugal Refrigerating Machines. The mill contains 15 Carrier Central Station Systems and literally miles of Carrier-fabricated ductwork. ▪ This modernization has been so successful that the same management specified Carrier air conditioning with refrigeration throughout when they built their new mills at Pendleton and Marietta. ▪ Whether your mill is old, new, or still-to-be, it can be made more efficient with Carrier air conditioning. If your mill now has an evaporative cooling system for controlling humidity, the addition of a Carrier Centrifugal Refrigerating Machine can provide temperature control, too. The booklet, "Textile Air Conditioning," tells the complete story. Write Carrier Corporation, Syracuse, New York.

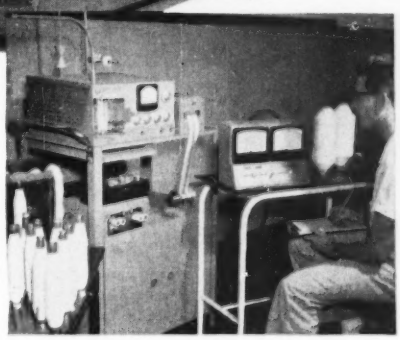
Carrier

air conditioning
refrigeration
industrial heating

New Automatic Evaluator



Speeds Quality Control with Brush Uniformity Analyzer*



The new Automatic Evaluator, designed for use with the Brush Uniformity Analyzer for textiles, offers you these major advantages in measurement of non-uniformity of yarn:

★ *You can obtain complete non-uniformity data on a 1000-foot sample of yarn in less than 4 minutes.*

★ *The Automatic Evaluator data correlates directly with the chart. All data is based on peak-to-peak variations, thus important variations are not "averaged-out."*

★ *A built-in timing device permits you to obtain data more easily than ever before. Automatic signal lights indicate when readings should be taken, and the operator does not have to push buttons, turn switches, or use correction devices.*

A staff of textile-trained engineers is available to help you with the application of the Uniformity Analyzer and Automatic Evaluator, both developed by the Institute of Textile Technology. For further information or demonstration send coupon now.

*Trade Mark

BRUSH ELECTRONICS COMPANY

INDUSTRIAL AND RESEARCH INSTRUMENTS
PIEZO-ELECTRIC MATERIALS • ACOUSTIC DEVICES
MAGNETIC RECORDING EQUIPMENT
ULTRASONIC EQUIPMENT

BRUSH 6 ELECTRONICS

formerly
The Brush Development Co.
Brush Electronics Company is an operating unit of Clevite Corporation.

WRITE FOR LITERATURE OR DEMONSTRATION

Brush Electronics Company, Dept. T-10
3405 Perkins Avenue, Cleveland 14, Ohio

☐ Please send me literature on the Brush Uniformity Analyzer and Automatic Evaluator.
☐ Please have your representative arrange for a demonstration.

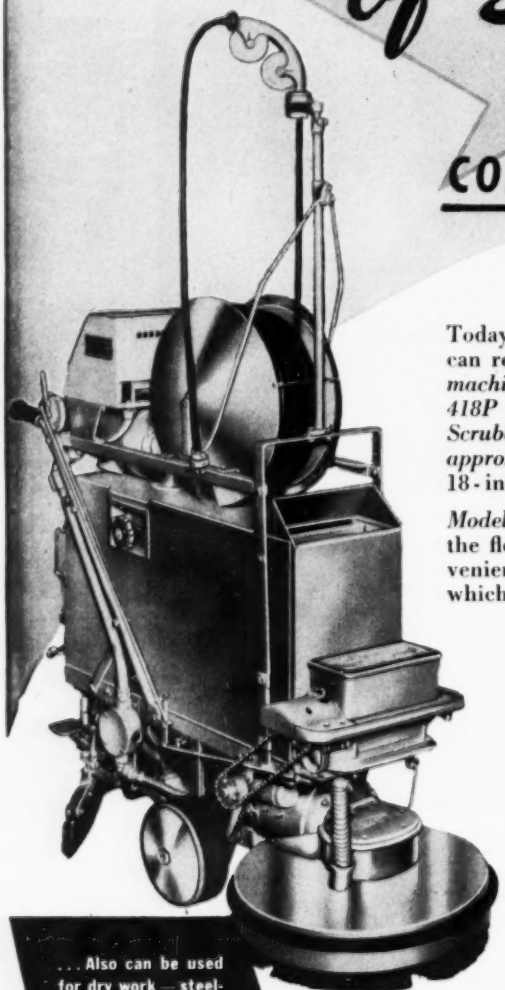
Name _____
Position _____
Company _____
Address _____
City _____
State _____

SMALL-AREA BUILDINGS...

Save 2/3 of Every Hour of Scrubbing Time

WITH A

COMBINATION SCRUBBER-VAC!



...Also can be used for dry work — steel-wooling, et cetera

Today, even buildings with but 2,000 to 15,000 sq. ft. of floor space can reap the labor-saving, cost-reducing benefits of *combination-machine-scrubbing.* Here's a *Combination Scrubber-Vac, Model 418P* at left, that's specially designed for such buildings. This *Scrubber-Vac,* which has an 18-inch brush ring, cleans floors in *approximately one-third the time* required with a conventional 18-inch machine and separate vac unit.

Model 418P applies the cleanser, scrubs, and picks up (damp-dries the floor) — *all in one operation!* Maintenance men like the convenience of working with this single unit... the thoroughness with which it cleans... and the features that make the machine simple to operate. It's *self-propelled,* and has a *positive* clutch. There are no switches to set for *fast* or *slow*—slight pressure of the hand on clutch lever adjusts speed to desired rate. The powerful vac performs efficiently and quietly. (Powder dispenser is optional.) Compactly built, the *418P* also serves advantageously in larger buildings for the care of floors in narrow aisles and congested areas.

Finnell makes *Scrubber-Vac Machines* for small, vast, and intermediate operations, and in *self-powered* as well as *electric* models. From this complete line, you can choose the size and model that's exactly right for *your* job (no need to *over-buy* or *under-buy*). It's also good to know that you can lease or purchase a *Scrubber-Vac,* and that *there's a Finnell man nearby* to help train your maintenance operators in the proper use of the machine and to make periodic check-ups. For demonstration, consultation, or literature, phone or write nearest *Finnell Branch* or Finnell System, Inc., 131 East Street, Elkhart, Indiana. Branch Offices in all principal cities of the United States and Canada.

Conserve Manpower with Completely Mechanized Scrubbing

FINNELL SYSTEM, INC.

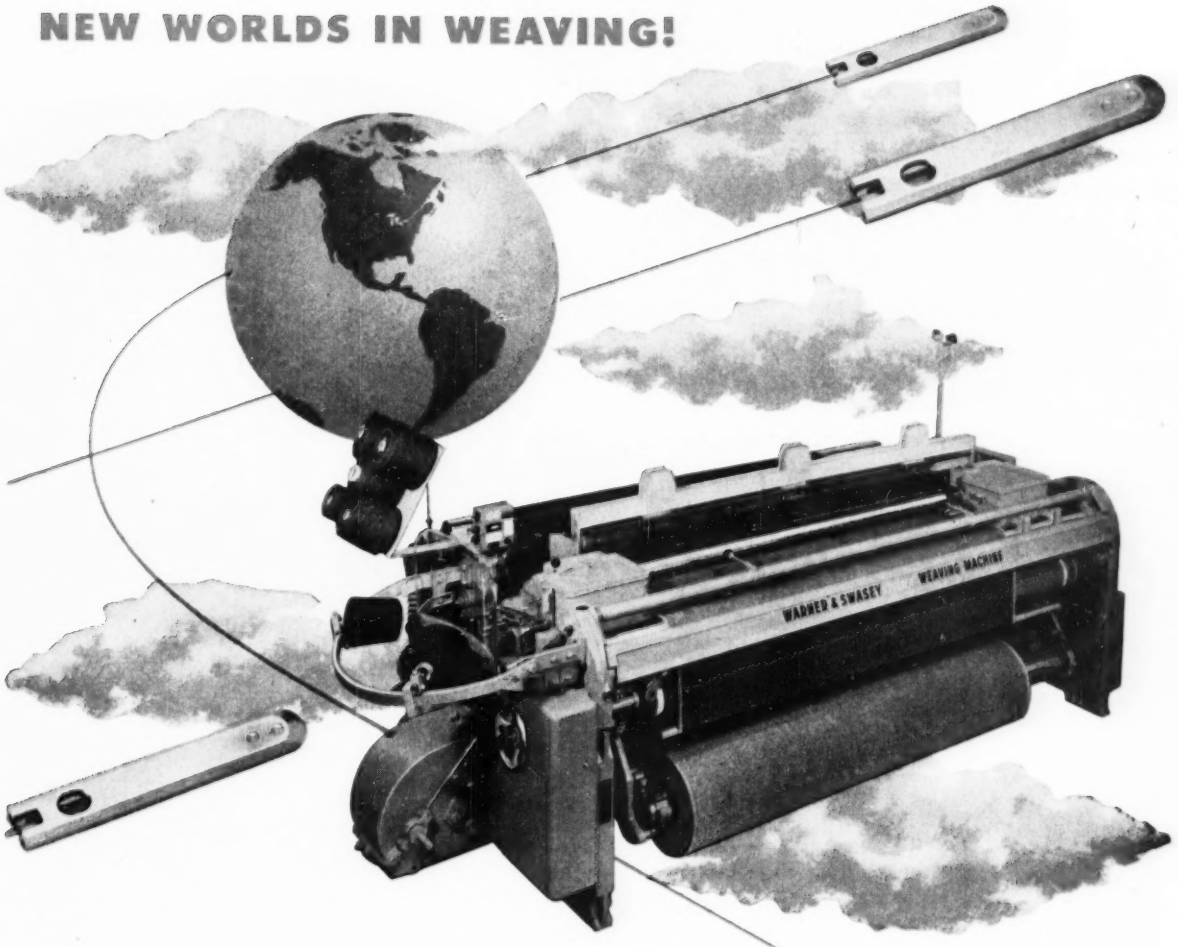
Originators of Power Scrubbing and Polishing Machines

Everything FINNELL for Floor Care

50th Anniversary

BRANCHES IN ALL PRINCIPAL CITIES

NEW WORLDS IN WEAVING!



with the new

WARNER & SWASEY-SULZER WEAVING MACHINE

In mill after mill—weaving worsteds, woolens, spun synthetics, and blends—the new Warner & Swasey-Sulzer Weaving Machine is setting new standards of efficiency! It's so much *faster*—every second, four shuttles speed the yarn across the machine—at 240 picks per minute! These shuttles draw directly from large packages—eliminating all the problems of conventional bobbin-shuttle operation. It weaves *better quality*, more lofty fabrics—drastically cuts mending. Every day this revolutionary new machine removes old barriers to profits—creating new worlds in weaving for you—in your mill, on your fabrics, meeting your needs for a more profitable future!

WARNER & SWASEY
TEXTILE MACHINERY DIVISION

SALES OFFICES

Main Office and Factory: 5701 Carnegie Ave., Cleveland 3, Ohio
61 Rivulet St., North Uxbridge, Mass.
6910 Market St., Philadelphia, Pa.
Candler Building, Atlanta, Ga.
1820 Browning Ave., Charlotte, N. C.

YOU CAN PRODUCE IT BETTER, FASTER, FOR LESS WITH WARNER & SWASEY MACHINE TOOLS, TEXTILE MACHINERY, CONSTRUCTION MACHINERY

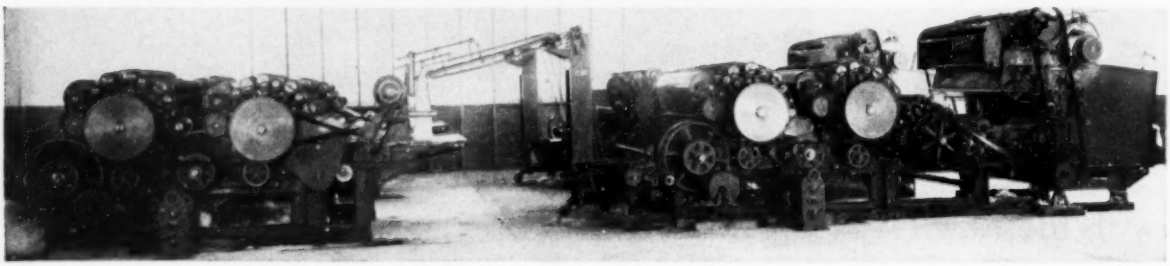
Increase Production

Reduce Costs

Improve Product Quality

with

A Proctor Reprocessing System Designed to Your Needs



Latest design Proctor Duplex Garnett in operation in one of the country's newest all synthetic garnetting plants.

A check of plant after plant where Proctor systems are in operation for reprocessing fibers reveals the same three results in each—increased production . . . reduced operating costs . . . and a better quality finished product.

The reason is two fold: First, Proctor engineers have done more in the development of fiber preparation equipment than anyone else in the world. Second, their extensive knowledge has been used to make certain that each of these systems is best suited to the specific fiber and output requirements of the individual plant.

In recent years—with the tremendous increase in synthetics reprocessing—the developments that have taken place in Proctor equipment are extensive. You owe it to yourself to learn how these late developments can help you to improve the efficiency of your plant and increase your profits. Write today for the very latest information.

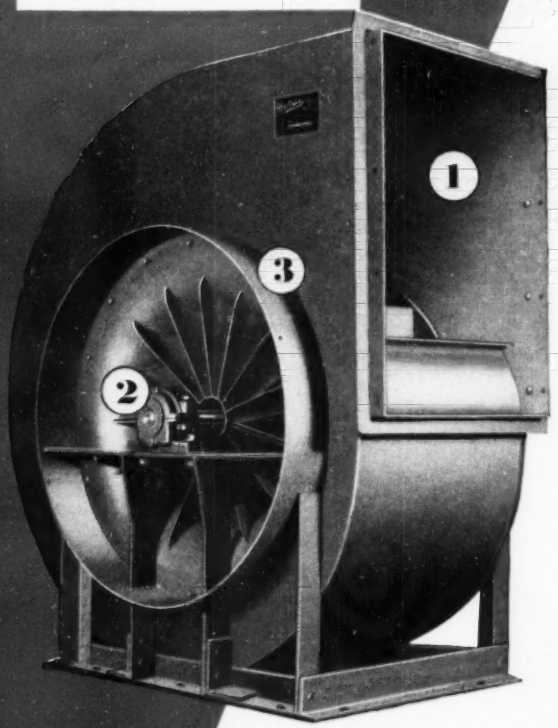
PROCTOR & SCHWARTZ INC.
PHILADELPHIA 20 • PA •

NEW!

"Buffalo" TYPE "BL" Limit-Load REG. U.S. PAT. OFF. Ventilating Fan

COMPLETE FAN

1. Streamlined housing with outlet designed for most efficient air delivery.
2. Anti-friction or sleeve bearings to suit job requirements.
3. Ample inlet collar for easy connection to ductwork.



In our seventy-six years of fan manufacturing, no fan has been more respected for fine performance than the "Buffalo" Type "LL" Ventilating Fan. This fine performance is now further improved in the new "Buffalo" Type "BL" Limit-Load Fan — designed especially for general ventilation, air conditioning and industrial service.

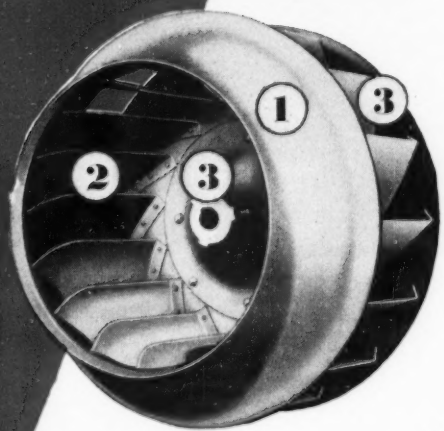
This new fan offers: (1) High efficiency; (2) Minimum noise level, over wide capacity range; (3) Full Limit-Load horsepower characteristic; (4) Stable performance from shut-off to free delivery.

Retaining the husky construction which has characterized "Buffalo" fans for many years, the new Type "BL" has some outstanding quality design features.

The Type "BL" fan will be built in standard sizes and arrangements with rotor diameters from 12¼" to 108¾", to handle from 1,000 to 500,000 cfm.

You will want this superbly-performing new fan with the "Q" Factor* on your next job! Write for new Bulletin F-100, which contains complete engineering details, including performance tables and dimensions.

** The "Q" Factor — The built-in Quality which provides trouble-free satisfaction and long life.*



BUFFALO FORGE COMPANY

175 MORTIMER STREET BUFFALO, NEW YORK

Publishers of "Fan Engineering" Handbook

Canadian Blower & Forge Co., Ltd., Kitchener, Ont.

Sales Representatives in all Principal Cities

WHEEL

1. Heavy gauge die-formed shroud full curvature for proper air flow in wheel.
2. Die-formed blades curved and backwardly inclined for stable air flow. Welded and riveted for maximum strength.
3. Solid back plate with extra heavy hub.

CERTIFIED RATINGS

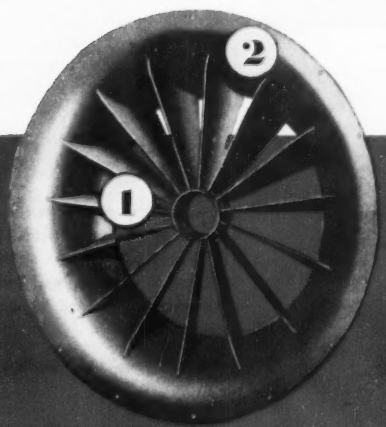
Certified ratings are the result of tests made by the Manufacturer in accordance with the Standard Test Code for Centrifugal Axial, and Propeller Fans adopted jointly by the National Association of Fan Manufacturers and the American Society of Heating and Ventilating Engineers.

AUTHORIZED BY N A F M

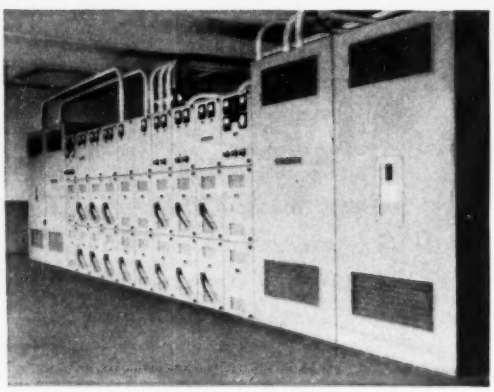
© 1948 NATIONAL ASSOCIATION OF FAN MFGRS.

INLET

1. Furnished as standard, and exclusive with "Buffalo", these stationary inlet vanes reduce turbulence and assure rated air delivery in spite of unfavorable inlet conditions.
2. Die-formed inlet bell matches wheel shroud.

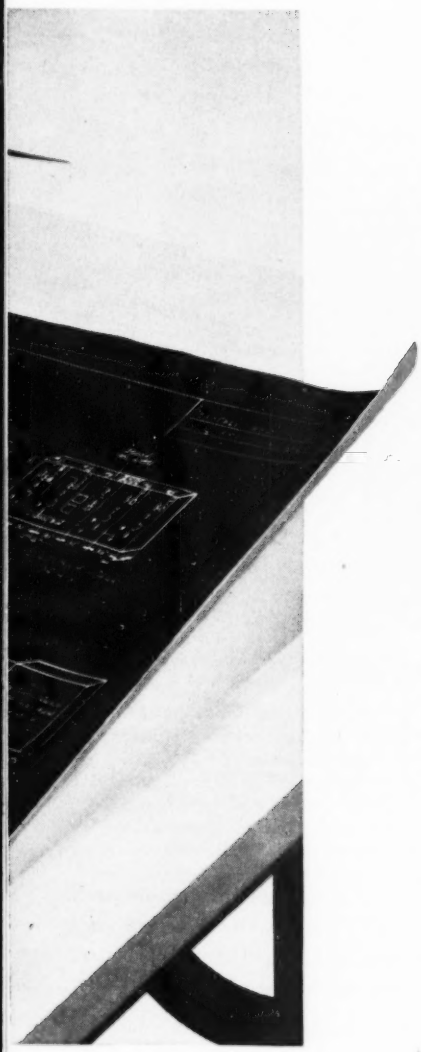


It's as easy to inspect these outdoor switchgear units as it is to open the door of your office. Yet, there's absolutely no danger to employees making checks. Modern Westinghouse switchgear installations will give your mill safe, dependable power system protection for years.



This Westinghouse indoor power center is located close to the load, thereby reducing cable runs and line losses. Duplicate transformers at each end assure continuous power. If a fault occurs on one line, the other transformer will handle the temporary overload while repairs are made.

Two Westinghouse units modernized this mill's entire power system



When officials of the Gaffney Manufacturing Company, one of the most modern print cloth mills in the country, called in Westinghouse, they discovered how simple and inexpensive a modern power distribution system can be. Westinghouse engineers studied their problem and recommended only two new units—outdoor metal-clad switchgear and an indoor power center. Yet, look at the benefits they got!

Installation costs cut 10%—voltage improved 5%—Both the Westinghouse switchgear and power center were shipped as completely assembled units—pre-tested and wired at the factory. This saved over 10% in installation costs. Line losses were lowered and 100 feet of cable runs were saved by locating the power center indoors, close to the load. Over-all voltage conditions were improved approximately 5%. More power was available for increasing loads.

High service continuity—low maintenance—Dual feeder cables and transformers in the power center assure continuous power and flexibility. If a fault should occur on one line, the other transformer will carry the temporary overload until repairs can be made. Draw-out air circuit breakers and air-cooled transformers eliminate all of the maintenance necessary when oil-filled types are used. Also, all units are easily accessible, and can be installed or removed with file drawer efficiency.

Complete safety for personnel and equipment—Careless employees can't get shocks because all power equipment and feeder circuits are completely enclosed. High-interrupting-capacity air circuit breakers give positive protection against fault currents and dangerous overloads. There's no chance of fire or explosion. The enclosed air-cooled transformers are noninflammable, nonexplosive and contain no corrosive liquids.

There may be an easy, inexpensive solution to your power problems—If you're expanding, modernizing or just want to get the "bugs" out of your present power distribution system, call your Westinghouse representative. He'll go over your electrical requirements and show you how expert Westinghouse planning assistance and highly efficient equipment can give you benefits like these. Westinghouse Electric Corporation, P. O. Box 868, Pittsburgh 30, Pa.

J-94999

YOU CAN BE **SURE**...IF IT'S

Westinghouse

you can't sit this one out...

Pleats that won't sit out when they're sat *on* are a boon that women have learned to look for—and are willing to pay for! And they're just one of many pace-setting advantages you can build into the fabrics you create by using Du Pont's "modern-living" fibers.

Other such exciting textile advances as thick and thin and crimpable yarns . . . and fibers that offer *built-in* shape retention, wrinkle resistance, and easy care . . . stem from Du Pont research for today's world. For today's customers *want* home furnishings and apparel that look better, wear longer, and require less care.

Use Du Pont modern-living fibers for the extras that spell a fabric success. Count on Du Pont's experience in fiber research to help you keep pace with the more demanding needs of today's customers.

Du Pont's Modern-Living Fibers

DU PONT
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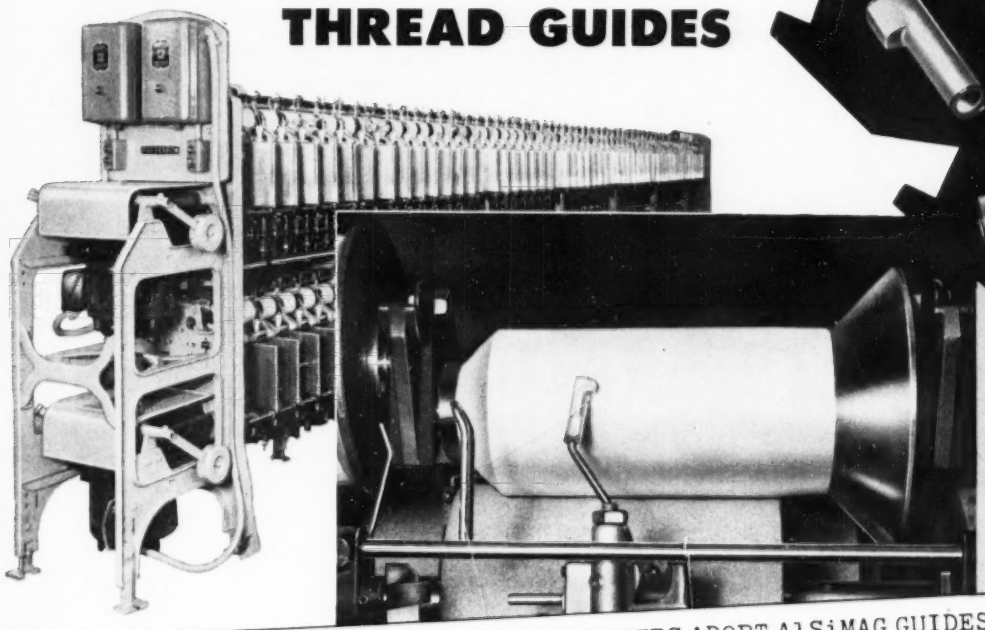
NYLON | RAYON | ACETATE | ORLON® ACRYLIC FIBER | DACRON® POLYESTER FIBER

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

FLETCHER *STANDARDIZES ON* ALSIMAG®

THREAD GUIDES



Three views of guide shown actual size

AlSiMag GE-28146 THREAD GUIDE with metallized ends. So hard, long-lived, it is soft soldered for PERMANENT MOUNTING.

MORE AND MORE LEADING MACHINERY MANUFACTURERS ADOPT AlSiMAG GUIDES AS STANDARD EQUIPMENT

FLETCHER WORKS

of Philadelphia, like other leading textile machinery manufacturers, standardizes on AlSiMag thread guides for their new Heavy Duty King Spool Pirn Twister and the Heavy Duty King Spool Twister for Conventional Spinning Bobbins. AlSiMag guides were chosen because of their extreme hardness and long life and because they " . . . lay the yarn on the spool most accurately and enable us to produce a perfectly formed king spool free of overwinds."

These guides have metallized areas on both ends. These metallized areas are fired into the ceramic and become an integral part of it. This permits Fletcher Works to attach the guide at both ends by soldering. The result is that the guides are accurately and permanently mounted. These AlSiMag guides are so hard, give such long service, that permanent attachment is desirable.

Guides with areas metallized for attachment by soldering are another AlSiMag FIRST. Introduced about two years ago and thoroughly tested in many mills, this feature is now available on all AlSiMag guides on special order.

The extremely long life of AlSiMag guides has been proved in mill after mill. In many instances the cost records of those mills show that AlSiMag thread guide costs, per pound of yarn processed, are LESS THAN 5% of former guide costs. AlSiMag guides can make big savings in YOUR MILL.

SEE FOR YOURSELF!

Test samples from our files sent without charge on request. If your production could be improved by a special guide, send us your ideas and let us make samples to your specifications at reasonable cost. Your own tests will show you that you can speed your processing, have less down time, improve your quality, and save money with AlSiMag guides. Test them—and you'll buy AlSiMag.

52ND YEAR OF CERAMIC LEADERSHIP

AMERICAN LAVA CORPORATION

CHATTANOOGA 5, TENNESSEE

A SUBSIDIARY OF MINNESOTA MINING AND MANUFACTURING COMPANY

SALES ENGINEERS: NORTH AND EAST: Jay S. Gosnell, 671 Broad St., Newark, N. J., Mitchell 2-8159. SOUTHEAST: Joe E. Spearman, 401 Belton St., Charlotte, N. C., 4-1525. ALL OTHER AREAS: J. B. Shacklett, American Lava Corporation, Chattanooga 5, Tenn., 5-3411. • CANADIAN REPRESENTATIVE: Ian M. Haldane and Company, Post Office Box 54, London, Ontario, Canada. • CONTINENTAL EUROPEAN REPRESENTATIVE: P. C. Huguenin Luzern, Gerbergasse 6, Luzern, Switzerland.

200 GPH Gaulin Homogenizer has run continuously in this prominent mill for over three years — with negligible maintenance expense.

Another Major Mill
Boosts Weaving Efficiencies
with GAULIN-Homogenized Size

"We find Gaulin-Homogenized Size makes a *stronger, more elastic* yarn — that sheds less and breaks less at the loom and slasher," say the management of this world-famous cotton mill. "Since we've switched to Gaulin-Homogenized Size our weaving efficiencies have jumped 1 to 1½%."

HUNDREDS OF MILLS AGREE

By converting starch mechanically, instead of thermally, a Gaulin Homogenizer furnishes a finer size . . . with a stable and uniform viscosity.

It penetrates yarn lightly but evenly . . . bonds fibers together smoothly, firmly — without coating or matting and making them brittle.

Experience in hundreds of mills *proves* Gaulin-Homogenized Size costs less . . . provides better pickup . . . makes a *stronger, more elastic* yarn.

SYNTHETICS — WORSTEDS

Mills are now preparing more uniform sizes for Synthetics and Worsteds, too, with a Gaulin Homogenizer. Sizes are made finer, faster and at substantially lower costs according to field reports.

MANTON-GAULIN
MANUFACTURING COMPANY, INC.
68 GARDEN STREET, EVERETT 49, MASS.

World's Largest Manufacturer of Homogenizers, Triplex Stainless-Steel High Pressure Pumps, and Colloid Mills

today, more than ever, you need **PRECISION**

today, more than ever, you need **ALTHOUSE**

Bring your toughest dyeing problems to Althouse

. . . we'll *help* you to solve them. Benefit from the practical SERVICE

rendered by our technically-trained representatives and our trouble-shooting "experts" in the

research and experimental laboratories here at our model plant. Their

advice and cooperation are

yours for the asking!

ALTHOUSE

Chemical Company, Inc.

READING, PENNSYLVANIA

pace-setter in precision dye-making

Make Your Difficult Constructions Easier to Weave With

STA-GEL®

Staley's new high efficiency spun rayon size

N.C.*

*NON-CONGEALING

STA-GEL N.C. offers the fluidity to meet your specific concentration needs

Now you can definitely improve loom efficiency with STA-GEL non-congealing warp sizes for spun rayon and blends! New, improved STA-GEL N.C. is made in a range of fluidities to meet the concentration needs for your particular blend of yarn.

STA-GEL N.C. gives you these important advantages:

- Smoother, Tougher Size
- Reduced Shedding
- Improved Loom Efficiency
- Easier Desizing
- More Strength and Binding Power
- Reduced Cost

Join the many important mills now using STA-GEL. Make your difficult constructions easier to weave with Staley's new, better sizing!

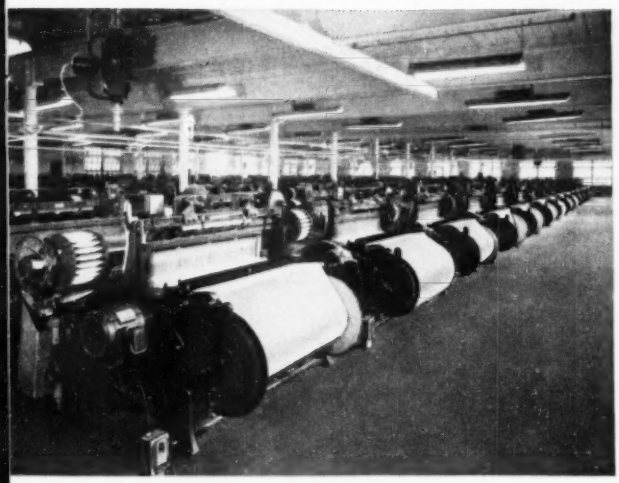
Investigate STA-GEL N.C.! Write today for all the facts about this superior sizing.

PRODUCTS FROM CORN
Staley's

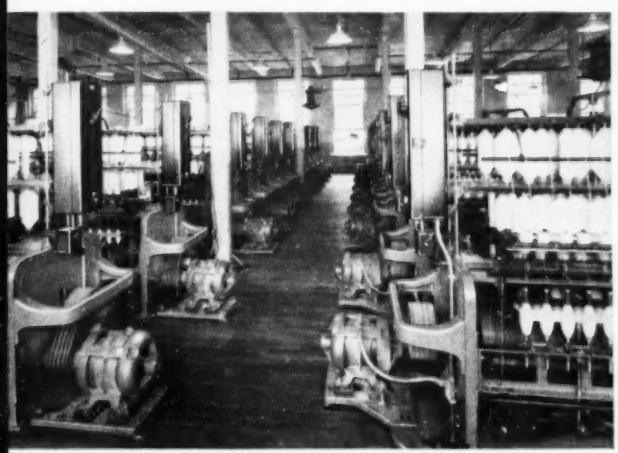
A. E. Staley Mfg. Company, Decatur, Illinois

CUTLER-HAMMER

MOTOR CONTROL FOR THE TEXTILE INDUSTRY



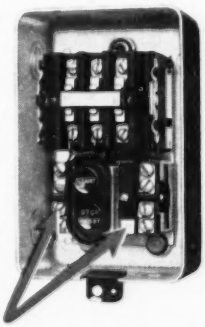
at **LEWARD COTTON MILLS.** Cutler-Hammer Loom Switches and Pedestals equip the loom room. Leward Cotton Mills, Inc., Worthville, N. C.



at **STATESVILLE.** Cutler-Hammer Combination Starters and Shipper Rod Switches on spinning frames in STATESVILLE DIVISION, The Seminole Mills, Statesville, N. C.

CUTLER-HAMMER EUTECTIC ELEMENT OVERLOAD PROTECTION

One of the most ingenious and useful inventions of all time, Cutler-Hammer Eutectic Element Overload Protection accurately duplicates, measures and responds to heating effect produced within the motor. The world's most widely used and the world's most dependable motor overload protection, not only permits the motor to work *closer* to capacity in all cases but to do so in perfect safety. A standard feature of Cutler-Hammer Control.

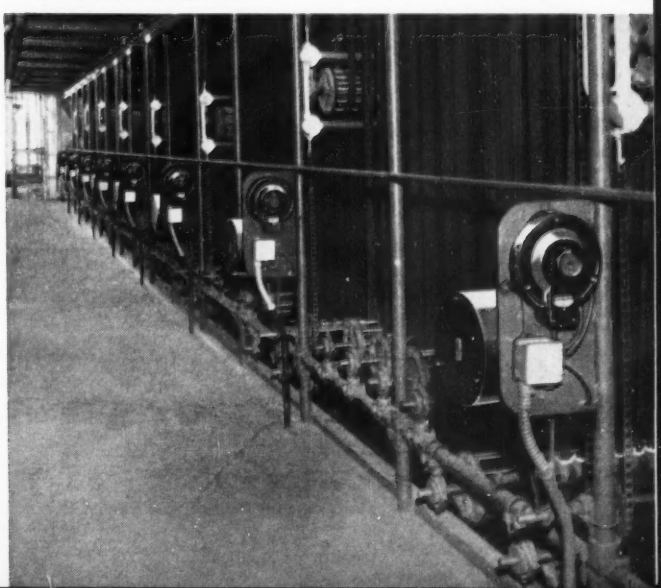


Protection too important to lose by default

The fact that a single production interruption caused by faulty control equipment can cost a textile mill more than the entire purchase price of the control shows clearly that dependability in motor control is too important to lose by default. Motor control must be purchased by *name*... not merely by size and type. Many mills have found it pays to standardize on Cutler-Hammer Motor Control and refuse all substitutes. They have found Cutler-Hammer dependability far more than a mere competitive claim, that it can stand out in operating records as an important economy. They recognize it as the earned advantage of the longest and most intense specialization in motor control engineering... a safeguard for every motor control need from the simplest starter to the most complex of electronic equipment. You too will find it pays to insist on Cutler-Hammer Motor Control. A network of Authorized Cutler-Hammer Distributors throughout the textile manufacturing areas insures prompt attention and supply. CUTLER-HAMMER, Inc., 1456 St. Paul Avenue, Milwaukee 1, Wisconsin.

CUTLER·HAMMER
MOTOR CONTROL
C·H

at **CONE MILLS.** Cutler-Hammer Dancer Roll Rheostats and Vernier Rheostats on 20 motor indigo dye range. Cone Mills, Greensboro, N. C.



...with TYCOL lubricants on hand!

Cleaner because they cling! Tycol Amortac oils are tailored for mill operations with a special additive to impart positive "non-drip" characteristics. They'll lubricate looms, also top rolls on spinning, drawing and roving frames... with no "throw off", no staining of finished threads! The Amortac series is just tacky enough to penetrate and cling to bearings – without splash – at peak roll speeds. With an added bonus: they'll minimize corrosion even in the most humid atmosphere! Request full information from your local Tide Water Associated office – today!

TYCOL
INDUSTRIAL LUBRICANTS

Boston • Charlotte, N. C. • Pittsburgh
Philadelphia • Chicago • Detroit
Tulsa • Cleveland • San Francisco
Toronto, Canada

Over 300 Tycol industrial lubricants are at your disposal . . . engineered to fit the job!

REFINERS AND MARKETERS OF VEEDOL . . . THE WORLD'S MOST FAMOUS MOTOR OIL

TIDE WATER ASSOCIATED OIL COMPANY
17 BATTERY PLACE · NEW YORK 4, N. Y.

GET A BETTER PICTURE OF YOUR PEROXIDE BLEACHING OPERATIONS

Du Pont Bleachery Survey Pinpoints Production Problems ...Can Help Lower Your Costs

Production up 22½%! Water consumption down 48%! These are typical gains resulting from recent surveys by Du Pont specialists. This service may be able to help your mill reach or maintain peak efficiency.

Du Pont Bleachery Surveys are conducted by men with wide experience in all phases of textile bleaching. Without interrupting production, they spend from one to three days surveying a plant. Fuel, water and chemical consumption are studied . . . cloth production checked...quality of finished goods examined.

During their study, the Du Pont specialists take samples of cloth at each stage of the bleaching process. These samples, together with the necessary data, are sent to a Du Pont laboratory for complete analysis. Reports prepared by specialists are next reviewed by top experts and then forwarded to the mills. Included are recommendations for reducing costs and improving the product.

This valuable Du Pont service is offered without charge to all users of peroxide in the United States. Whether or not a survey is required, your mill's technical staff is invited to discuss bleaching problems at any time with Du Pont specialists.

DU PONT PEROXIDES

FOR TEXTILE BLEACHING

Available in drums and tank cars { **"Albone" 35 . . . Hydrogen Peroxide, 35%** / **"Albone" 50 . . . Hydrogen Peroxide, 50%**

DU PONT

REG. U.S. PAT. OFF.

BETTER THINGS FOR BETTER LIVING . . . *THROUGH CHEMISTRY*

SEND COUPON FOR DETAILS

E. I. du Pont de Nemours & Co. (Inc.) TI-103
Electrochemicals Department, Wilmington 98, Del.

Please send me more information about the free Du Pont Bleachery Survey. I am bleaching ☐ cotton ☐ wool ☐ man-made fibers.

*Name*_____ *Title*_____

*Firm*_____

*Street & No.*_____

*City*_____ *State*_____

Yarn of Identical Color from 6 Different Beams

. . . because All 6 were Dyed in the Same Bath

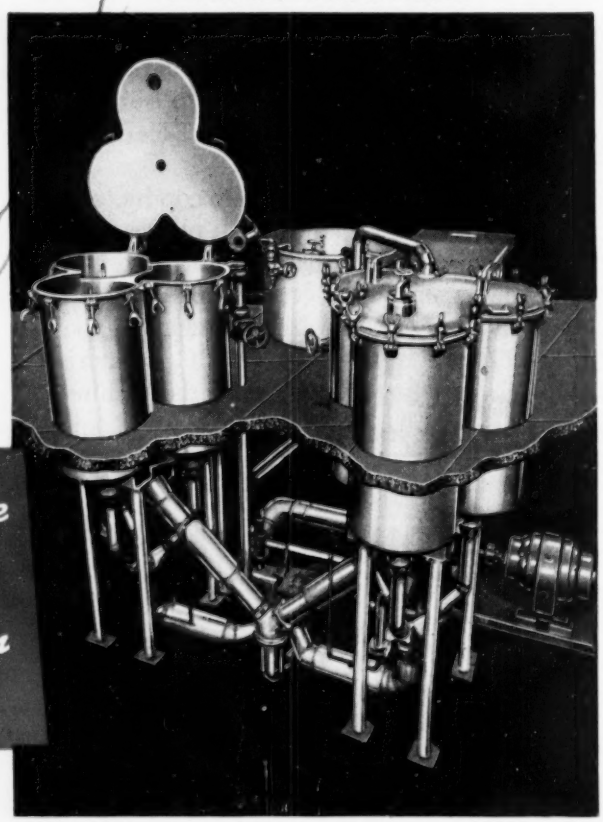
You can be positive of securing identical color only when the different beams or packages of yarn are dyed under identical conditions. And identical conditions are certain only when they are dyed in the same bath!

SMITH-DRUM Combination Beam and Package Dyeing Machines are designed to handle from 2 to 6 beams or yarn carriers simultaneously in the same bath and under identical conditions. This means that each beam or yarn carrier is dyed with the same liquor ratio . . . under the same operating conditions of flow, pressure and temperature . . . with uniform distribution of additions to the dye bath.

If you are interested in absolute uniformity of dyeing results, in economy of operation, in saving of floor space . . . let us arrange to have one of our representatives discuss the possible application of this SMITH-DRUM Machine to your operations. A letter, telephone call or wire will receive our prompt attention.

SMITH, DRUM & COMPANY
432 W. Allegheny Avenue, Phila. 33, Pa.

Southern Sales Representatives:
PARROTT & BALLENTINE
South Carolina National Bank Bldg.
Greenville, South Carolina



The **SMITH-DRUM** *Machine that Dyes from 2 to 6 Beams or Yarn Carriers in the Same Bath!*

Free copy of Catalog No. PBD-801 will be sent to you on request

New Textile Dyeing Reagent

IT WILL PAY YOU TO TRY STERLING TNA·5*

STERLING TNA-5 has been especially developed for textile dyeing to economically and efficiently produce better shades and finish.

TNA·5 is an efficient and economical replacement, pound for pound, for anhydrous sodium sulphate in a neutral dye bath.

TNA·5 is neutral, readily soluble in either cold or hot water.

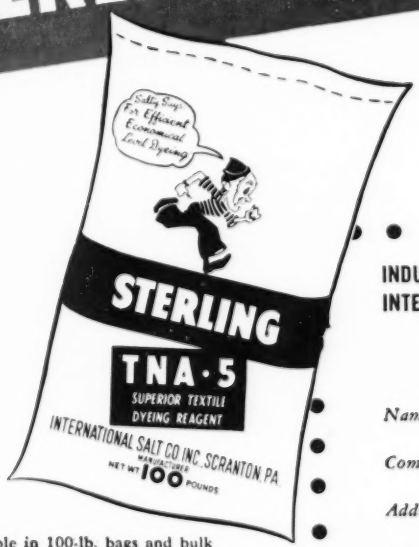
TNA·5 eliminates dye precipitation, produces a good color yield, level shades and a soft finish.

TNA·5 can be used in a neutral dye bath when dyeing cotton, rayon or wool or any blend of these fibers, in the staple or piece goods.

TNA·5 can be used either in the dry fine granular form or automatically converted to fully saturated brine with the TNA-5 Dissolver.

TNA·5 is especially effective with Direct and Naphthol Dyes, it produces excellent crock fastness and clear brilliant colors.

STERLING TNA·5 Trademark



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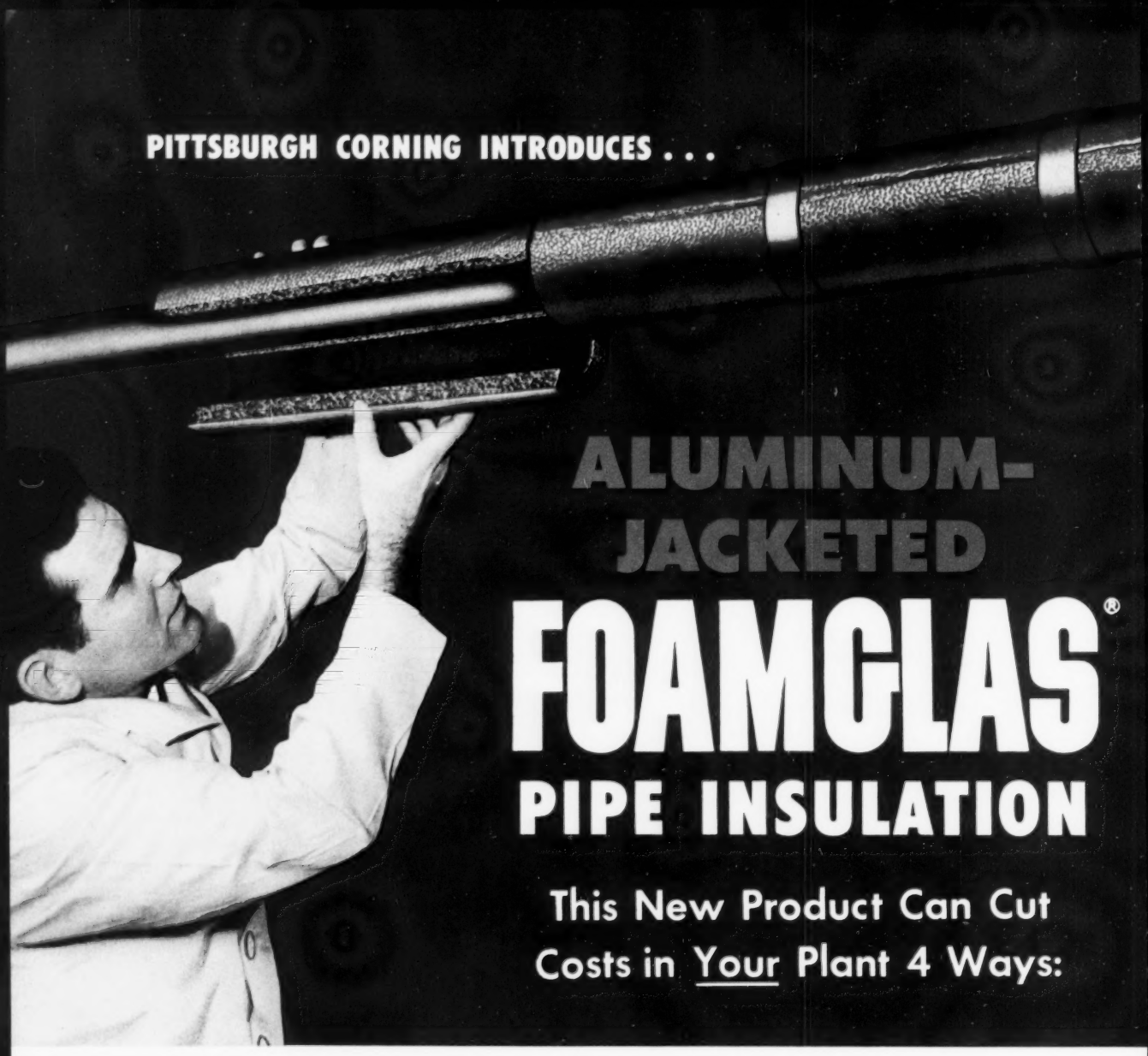


ALUMINUM-JACKETED FOAMGLAS® PIPE INSULATION

This New Product Can Cut Costs in Your Plant 4 Ways:

Eliminates Costly Steps in Application:

Already jacketed with aluminum at the factory, this new FOAMGLAS pipe covering gives you moisture-proof insulation, weather-proof jacket and attractive finish all-in-one.

Provides a Beautiful Finish at Minimum Cost:

Just slip Aluminum-jacketed FOAMGLAS on the pipe, fasten with bands and you have a most eye-appealing installation without the customary high costs required to give an attractive finish to ordinary insulations and field-applied jackets.

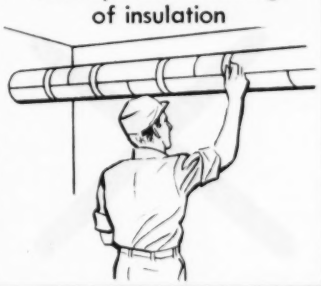
Avoids Maintenance Expense:

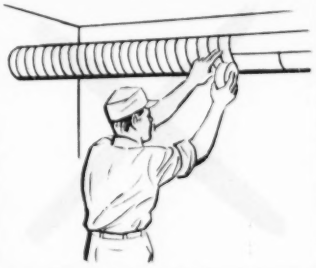
Now you have the rot-proof, fire-proof, acid-proof qualities of FOAMGLAS in the finish. It takes abuse and is weather-resistant even in industrial atmospheres. The smooth, wrinkle-free surface of .004″ thick, stippled aluminum is sanitary, easy to clean, saves the expense of re-painting year-after-year.

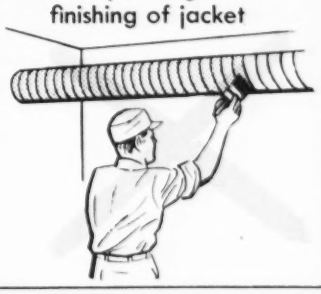
Increases Insulation Efficiency:

The heat reflecting asset of the aluminum jacket supplements the unequalled insulating properties of FOAMGLAS . . . the rigid, cellular glass insulation that *stays dry* inherently, retaining its original insulating efficiency.

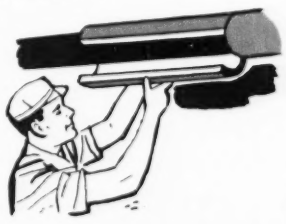
ALUMINUM-JACKETED FOAMGLAS eliminates these steps

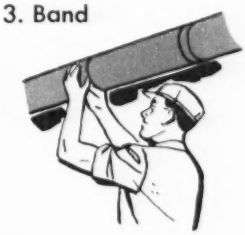






Installation is as easy as this





The simplicity of these specifications confirms how much you will save in labor and materials costs by standardizing on Aluminum-jacketed FOAMGLAS:

For cold and hot water and process lines (56° to 212° F)

1. Slip on Aluminum-jacketed FOAMGLAS.
2. Band* at butt joints and at center of each segment.

For refrigerated lines (below 56° F)

1. Apply thin coat of sealer** to all joints.
2. Slip on Aluminum-jacketed FOAMGLAS.
3. Band* at butt joints and at center of each segment.

For steam lines (212° F to 800° F)

1. Slip on Aluminum-jacketed FOAMGLAS.
2. Band* at butt joints and at center of each segment.

*Bands shall be aluminum ¾″ wide by 0.015″ thick . . . similar to those manufactured by A. J. Gerrard Co., Melrose Park, Ill.

**Sealer should be a product similar to "Foamseal" which is aluminum in color (Made by Benjamin Foster Co., Philadelphia, Pa.)

Sizes Available

Aluminum-jacketed FOAMGLAS is available in six thicknesses (for minus 50° to 800° F) for pipe sizes up to 14″.

FOAMGLAS pipe insulation is available without jacket or factory-jacketed with either glass fabric or aluminum. FOAMGLAS distributors are located in most principal cities. Write us for name and address of the one nearest you. For complete information about all forms of FOAMGLAS insulation, write us for booklets on uses on piping, equipment, refrigerated structures or normal temperature buildings, indicating your chief interest. Address Dept. FAJ:

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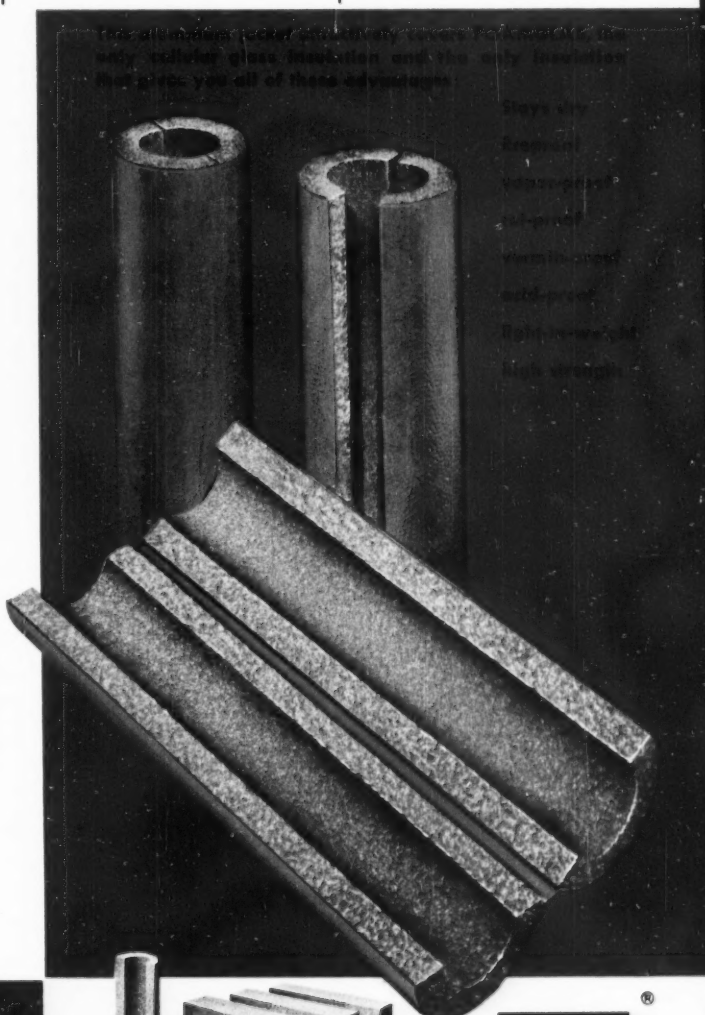
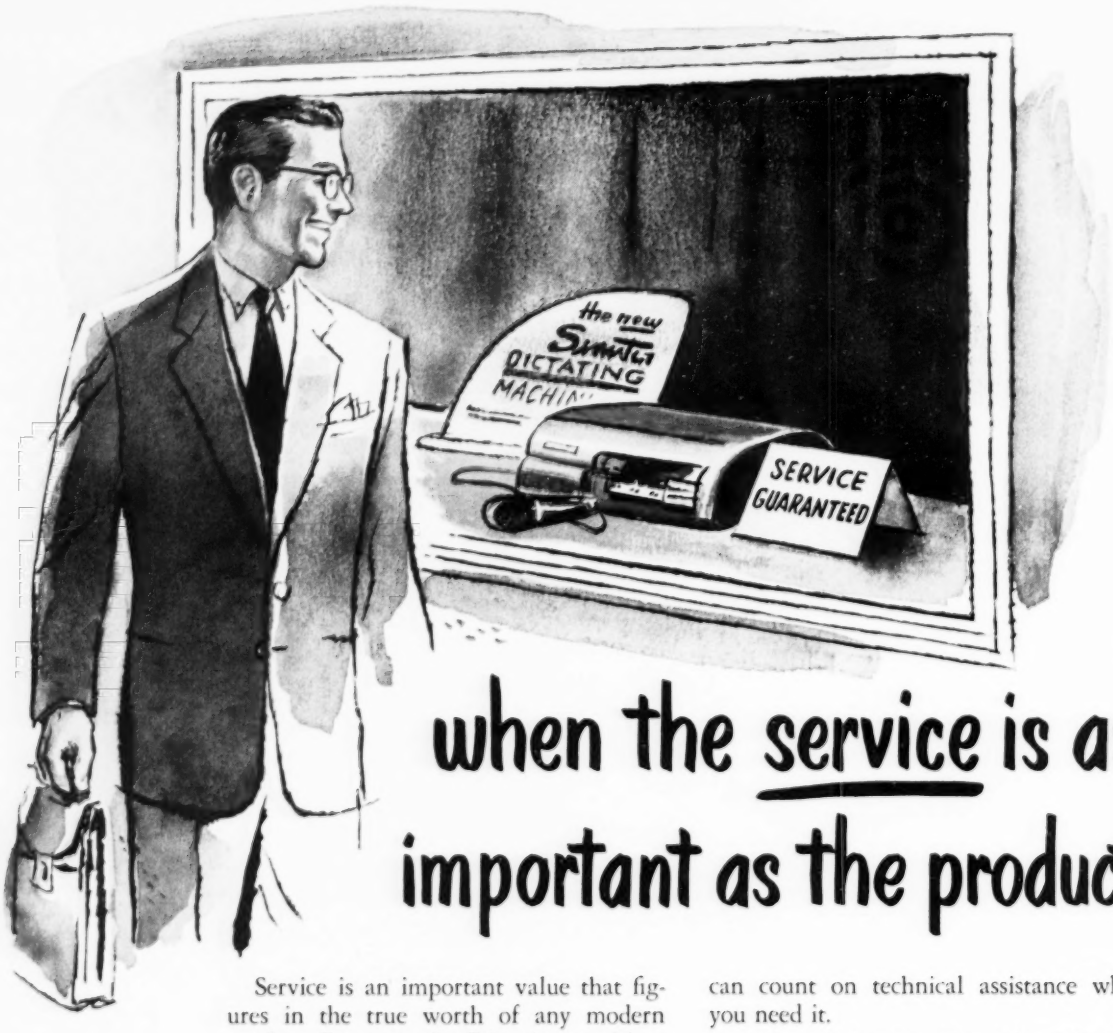
One Gateway Center, Pittsburgh 22, Pa.



FOAMGLAS®

the cellular glass insulation

PITTSBURGH PC CORNING®



when the service is as important as the product

Service is an important value that figures in the true worth of any modern product. For example: Dictating machines have become well-nigh essential to the smooth flow of business correspondence — but who could afford one, without service to keep it in operation?

Just so with card clothing: Quality alone is of little avail — unless the product is quickly and conveniently obtainable, unless you get the best type of clothing for your purpose, unless efficient installation service is near at hand, and unless you can count on technical assistance when you need it.

Ashworth Service, like Ashworth Card Clothing, is tops. Our 3 factories, 6 repair shops and 7 distributing points — all strategically located in major textile areas — assure adequate supply, convenient repairs, prompt deliveries.

Our staff of practical card men can also give you technical advice, survey your cards and recommend necessary repairs. Write to our nearest plant for further information on Ashworth Service. No obligation!

ASHWORTH BROS., INC.

American Card Clothing Co. (Woolen Division)

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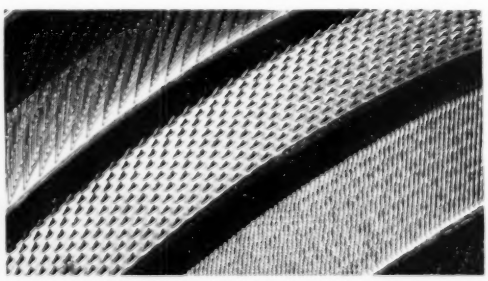
Greenville*†‡ Charlotte†‡ Dallas†‡ (Textile Supply Co.)

Factory* Repair Shop† Distributing Point‡

Ashworth **CARD CLOTHING**

3 FACTORIES **6** REPAIR SHOPS **7** DISTRIBUTING POINTS



FORTISAN*

The super-strong rayon fiber

Now in production for civilian needs

Since 1940, virtually all production of Celanese* Fortisan has been claimed for priority army applications. It is now available in practical quantities for civilian markets.

FORTISAN combines outstanding strength with dimensional stability unequalled in any organic fiber. Its war service includes a wide range of fiber uses from cargo chute fabrics to tiny core threads in radio and radar sets . . . from combat garment linings to airship envelope fabrics.

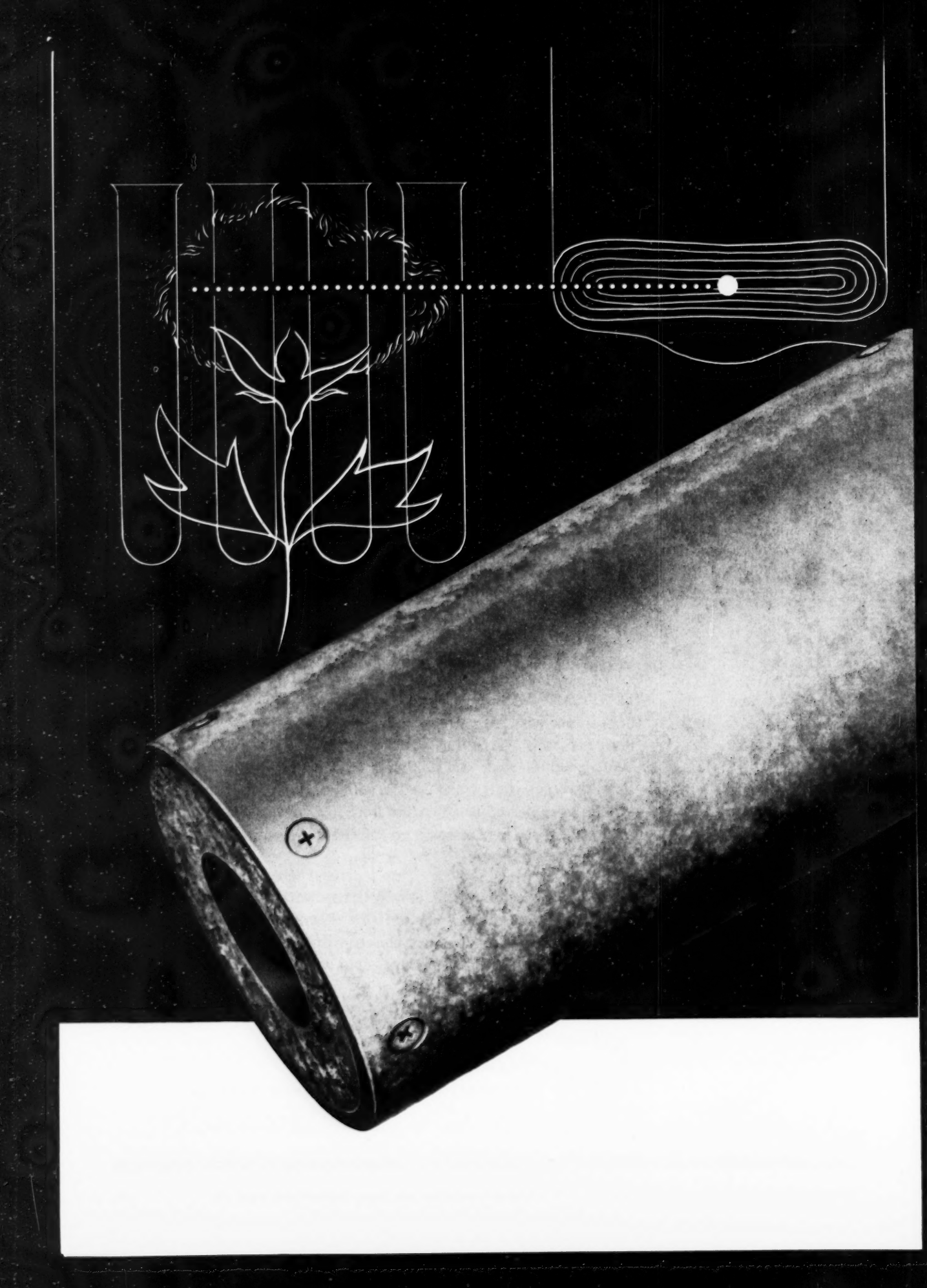
FORTISAN yarns and fabrics feature beauty of hand and appearance with high strength and stretch resistance . . . it does not melt and is not thermoplastic. FORTISAN is a 100% cellulose fiber and is attractive to producers of fine cotton goods in that when used in combination with cotton it may be subjected to all cotton finishing techniques, such as dyeing, printing, mercerizing, bleaching, fire retarding and coating processes.

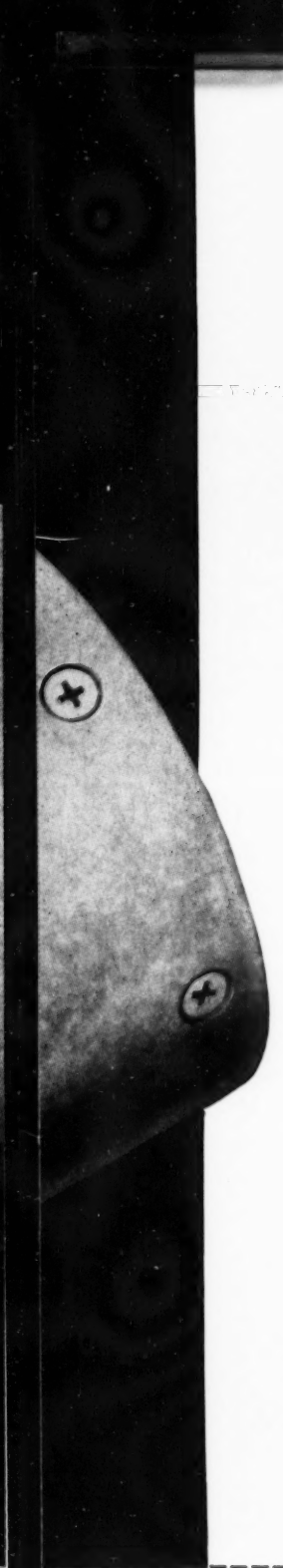
A wide variety of filling threads may be used with FORTISAN for an almost unlimited range of fabric effects. Textile manufacturers are invited to work closely with Celanese representatives in determining best possible uses of FORTISAN for their purposes.

*Reg. U.S. Pat. Off.

Celanese

CORPORATION OF AMERICA, NEW YORK 16





Here's what micarta® LAMINATED PLASTICS is doing to boost textile production

A leading textile mill wanted lighter, tougher lap rolls which would stay on the job longer. MICARTA® was the answer. Now the MICARTA lap rolls not only last months longer than the ordinary wooden rolls but their lighter weight permits up to three additional pounds of cotton to be wound on each roll. In addition, the MICARTA surface permits instant pick-up and wrinkle-free winding without the nuisance and expense of removing clinging bits of lap.

Here's what MICARTA can do for you

Light, tough, smooth-wearing MICARTA will pay off for you on products like spinning buckets, shuttles, bobbins, pirns, picker sticks and gears. On other textile applications, too, you can take advantage of its ability to withstand and "cushion" heavy vibration and shock . . . to reduce nerve-wracking noise. MICARTA means economy, less maintenance, more production.

Remember that Westinghouse-developed MICARTA is a thoroughly proved basic material. For the complete story on MICARTA call your nearest Westinghouse office or just fill out the coupon below. J-06542

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Westinghouse Electric Corporation • MICARTA Division, Trafford, Pa. • Attention: L. A. Padley

micarta® is basic!

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☐ Please send me the complete facts on MICARTA

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Why U. S. Rainbow V-Belts are superior: No. 2 in a series.

Every U. S. Belt has the unique Equa-Tensil Cord Section—the exclusive U. S. Rubber development that insures efficient *pull* and strength under a wide range of operating conditions.

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Order from your jobber, or contact any of our 25 District Sales Offices, or write to address below.

Top rubber cushion in closely engineered balance with the lower section . . . to keep coal under constant stretch and return.
Equa-Tensil Cord Section — all cords scientifically placed, each pulling its share of the load.
A sturdy level cushion for the Equa-Tensil Cord Section provides structural firmness for V-grooves and over the flat pulley of V-to-flat drives.

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When color quality is a "must", leading dyers, finishers and printers rely on four famous A.A.P. specialties for consistently good results. Technicians from our nearest branch will be happy to provide you with working samples and explain how each can be adapted to your color problems.

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Performance proved as a Leveling Agent—Penetrant—Dispersant and active Stripping Catalyzer. May be used for preparing, dyeing or finishing.

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Imparts amazing water fastness to cottons, rayons and multifibres in a simple after-treatment. Prevents wet migration. May be used after dyeing, finishing or printing.

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For naphthol dyeing and printing. Stabilizes and prevents decomposition of Fast Color Base or Salt solutions or print pastes. Minimizes crocking and brightens naphthol shades.

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Stops foam with maximum effectiveness. For dyeing, printing, or soaping. An odorless, viscous emulsion; it does not evaporate.

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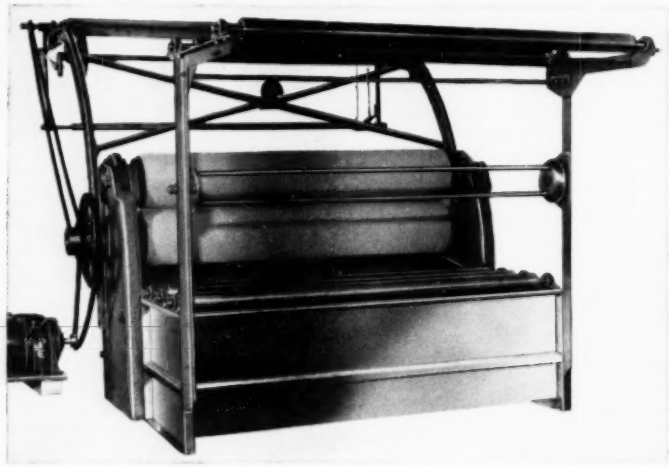
The Fleet Line

PADDERS

For Color Padding, Sizing, Resin Treatment Fire Proofing, Moth Proofing, etc.



TYPE AU-14 PADDER

- ✓ 14" Diameter Rolls, face length 84"
- ✓ Stainless Steel Tank
- ✓ Immersion and Carrier Rolls with entrance frame assembly at entering end of Tank
- ✓ Roll type folder at delivery end of machine driven by chain and sprocket from main roll
- ✓ Main Drive is variable speed unit
- ✓ Available with rubber-covered rolls or stainless steel bottom and rubber top rolls

SQUEEZE ROLL EXTRACTORS

The Fleet Line Squeeze Roll Extractor meets the demand for modern high speed production, without sacrificing efficiency. Massive construction assures long life. Rolls are operated with compressed air, which automatically equalizes roll pressure from end to end, with Fingertip Pneumatic Control from central panel. In all models, stainless steel drip pan is positioned beneath the main rolls. Suitable for all types of fabrics and for range operation, these Squeeze Rolls are made with air pressure or spring pressure and with rolls from 6" to 18" diameter and face lengths as required.

Send for catalog showing the complete Fleet Line of Padders and Squeeze Roll Extractors — types to specification for every need

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For a Wide Range of Finishes That Withstand Repeated Washings . . .

RHONITE R-1

Extraordinary washfastness distinguishes cotton, rayon, and blended fabrics that have been finished with RHONITE R-1 for crush resistance and stabilization of shrinkage.

This is equally true whether the finish is plain, calendered, or embossed.

Whatever the effect, cottons and other textiles treated with RHONITE R-1 can be laundered over and over again and still maintain their mill-fresh beauty, their resistance to wrinkling and shrinkage.

RHONITE is a trademark, Reg. U.S. Pat. Off. and in principal foreign countries.

Write or call for complete information about RHONITE R-1 —one of the quality chemicals for textile finishing made by Rohm & Haas Company.

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Representatives in principal foreign countries

THE BEST PEOPLE DYE *in Clean Air*

And they dye so much better. And the wonder fabrics in brilliant colors and delicate pastels that flow from the driers . . . without a trace of discoloration or spoilage due to airborne impurities . . . testify to the importance of super clean air in modern textile manufacturing.

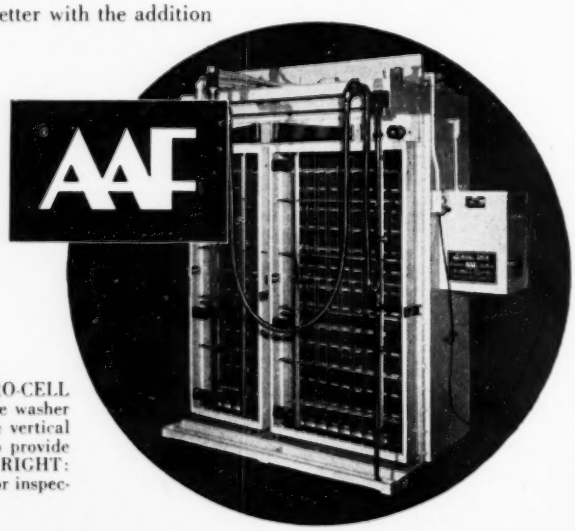
Although we manufacture the *only* complete line of air cleaning equipment in the world for all types of business . . . we believe we have made an exceptional contribution to the textile industry.

And now with the introduction of the famous ELECTRO-CELL precipitator incorporating the NEW TYPE "H" WASHER we are able to offer *push button* control for trouble-free cleaning and maintenance.

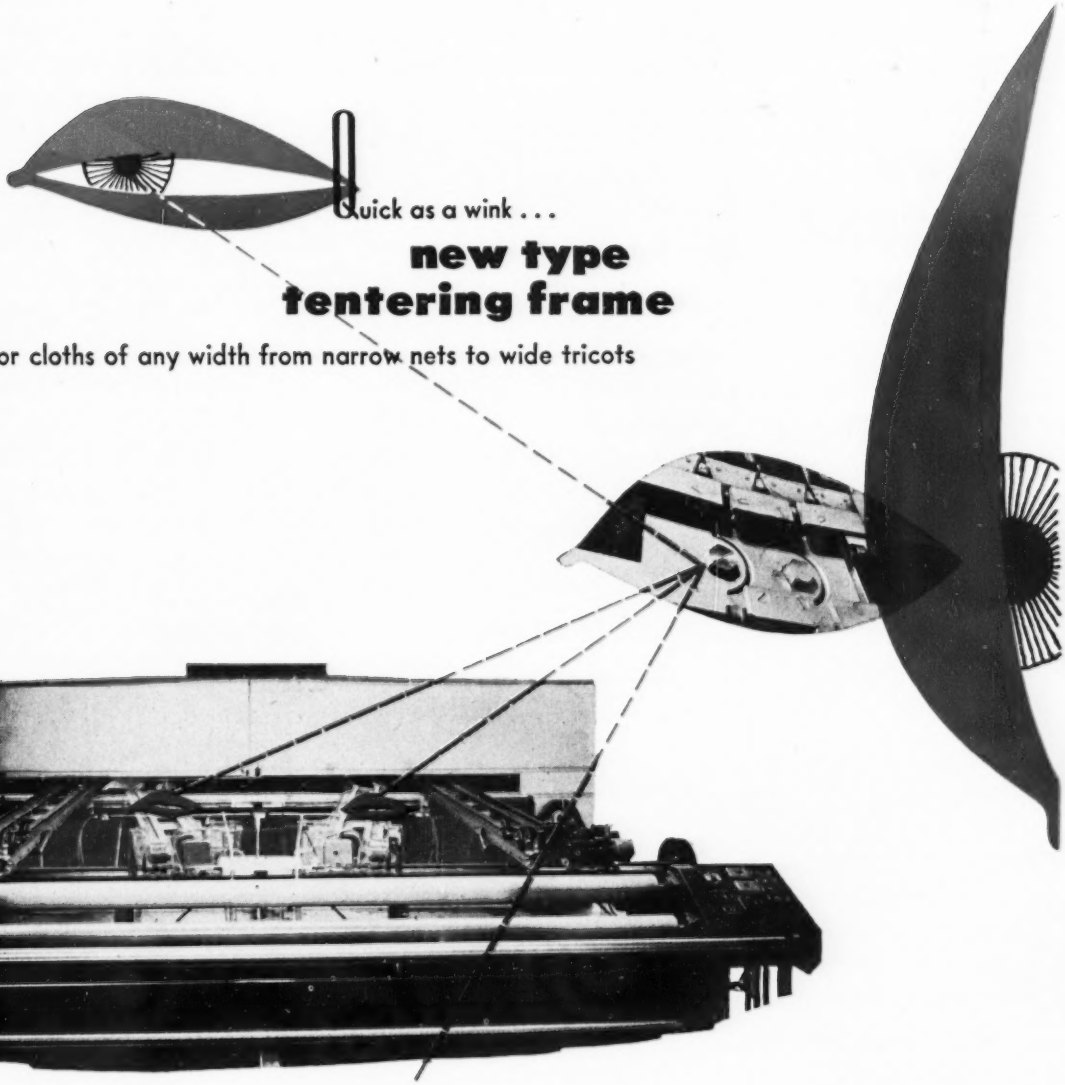
To find out how you can spin, weave or dye better with the addition of this newest AAF achievement . . . write for Bulletin number 252.

expect the best from

American Air Filter
COMPANY, INC.
275 Central Avenue, Louisville 8, Kentucky
American Air Filter of Canada, Ltd., Montreal, P. Q.



The Type "H" Washer incorporated as an integral part of an ELECTRO-CELL precipitator provides "push button" control of the cleaning operation. The washer travels on an overhead trackway which keeps it operating freely. The vertical header carrying the spray nozzle is rotated at each end of the travel to provide the necessary 5 degree lead to assure thorough cleaning of the plates. RIGHT: Shows how the hinged ionizers can be opened freely to permit removal or inspection of the plate cells.



Quick as a wink . . .

new type tentering frame

adjusts for cloths of any width from narrow nets to wide tricots

Now you can produce nets and other tricots to any desired width! Automatically stretch narrow fabrics to give substantially greater yields! Combined with McCreary's automatic pinning and overfeed,* the brand-new roller bearing tentering frame* permits great lateral change and multiple hinging.* These revolutionary new developments . . . plus other McCreary "firsts," such as dynamic braking* and electronic guider control* . . . provides far the most economical method of feeding cloth available today. These are just a few of the advantages built into the McCreary CONTINUOUS PROCESS for feeding, drying and setting NYLON and other synthetic tricots and woven fabrics.

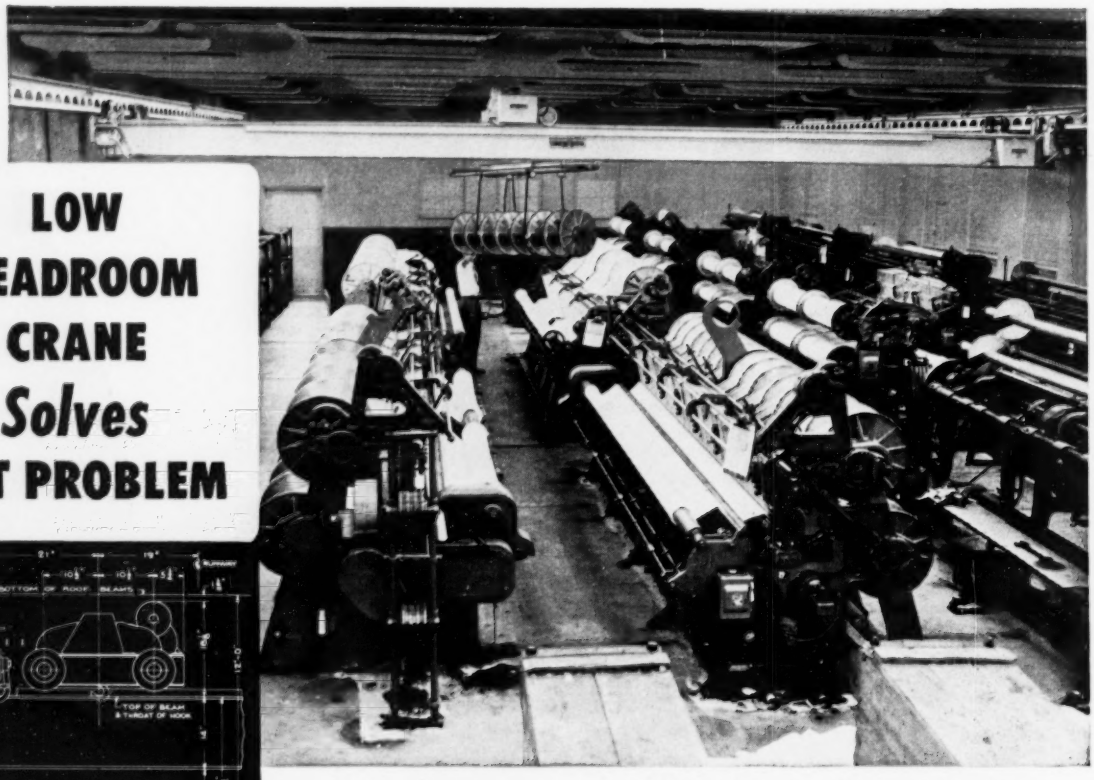
* Patents Pending

For further information, write at once . . .

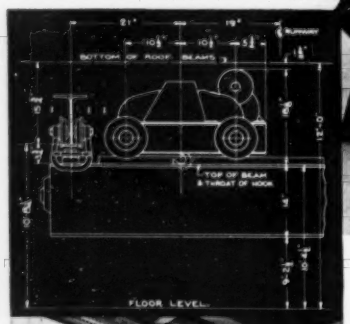
McCreary MACHINE WORKS, INC.
Cohoes, New York

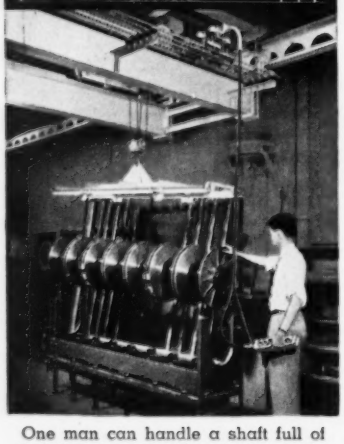
MANUFACTURERS OF TEXTILE FINISHING MACHINES SINCE 1874

LOW HEADROOM CRANE *Solves* LIFT PROBLEM



General view of knitting room and crane which has span of 34'-6". Speeds are: crane, 150 fpm.; trolley, 100 fpm.; hoist, 20 fpm.





One man can handle a shaft full of bobbins easily. All motions of the crane are controlled by the pendant push-button station.

When the fast-growing Fenimore Fabrics, Inc., Cobleskill, N. Y., knitters of fine rayon materials, erected their new building they wanted the ceiling as low as possible to conserve heat and have the lights near the work. A Cleveland Tramrail close-clearance double-girder crane with top-running trolley proved to be an ideal solution.

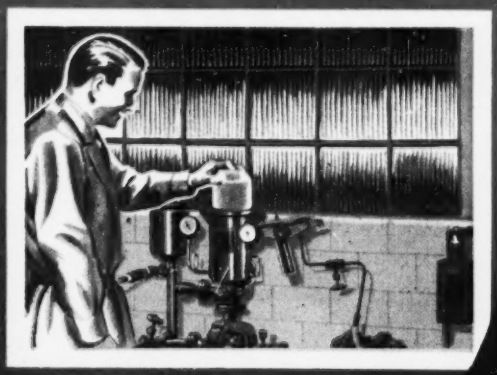
The distance from floor to underside of I-beams of building ceiling is 12'0". From bottom of crane to ceiling beams is 2'9½". This provides a clear distance under crane to floor of 9'2½". However, since the hook comes up between the girders, it can be raised to 10'4½" above the floor. As the bobbins are racked to a height of 7'6", there is ample room under the crane.

The crane is 2,000 lbs. capacity, completely motorized and floor-controlled by pendant push-button. It has been in operation since 1946 and is a big help in stacking all the warps near the machines.

GET THIS BOOK!
BOOKLET No. 2008. Packed with valuable information. Profusely illustrated. Write for free copy

CLEVELAND TRAMRAIL DIVISION
THE CLEVELAND CRANE & ENGINEERING CO.
2872 EAST 287th STREET, WICKLIFFE, OHIO

CLEVELAND TRAMRAIL
OVERHEAD MATERIALS HANDLING EQUIPMENT



Reveal that Hidden Beauty

More eye-appeal means more sales! Depend on DURA BEAU Finishes to give your product all the sales-allure that eye-appeal assures! Give your fabrics the time-tested, sales-tested DURA BEAU beauty treatment. A simple test-run will prove what this great textile "cosmetic" can do for your product!

The DURA BEAU GIRL of 1953

DuraBeau TEXTILE FINISHES

REG. U.S.A. and CANADA

In the field of hosiery, for instance, DURA BEAU Finishes have been used — for decades — on more stockings than all other finishes combined! Write, wire or phone for one of our practical fieldmen.

SCHOLLER BROS., INC. • Manufacturers of Soaps, Softeners, Sulfonated Oils and Finishes • Collins & Westmoreland Sts., Phila. 34, Pa.

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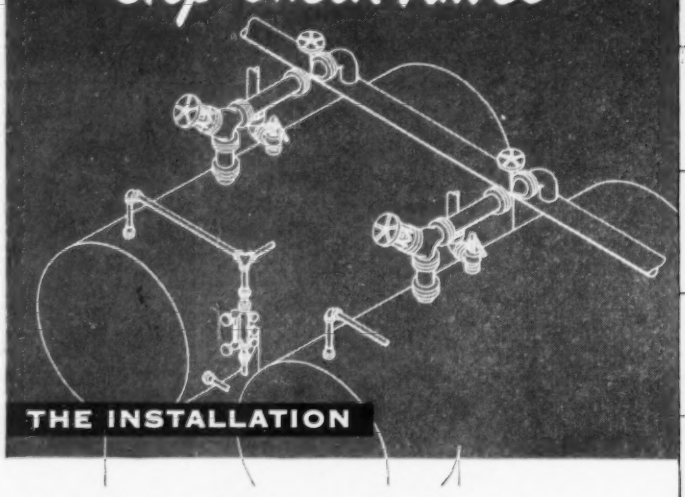
30 Years of Safety and Efficiency with these High Quality Stop-Check Valves



THE INSTALLATION

At the Eureka Redwood Lumber Company, Eureka, Calif., featuring eight 5-in. Crane stop-check valves on boiler lines to main steam header.

VALVE SERVICE RATINGS

SUITABILITY:	On the job for 30 years
FEATURES:	Only one moving part
MAINTENANCE COST:	One seat regrinding only
SERVICE LIFE:	Installed 1923 – still O.K.
OPERATING RESULTS:	Efficient performance – safe operation
AVAILABILITY:	Crane Catalog item – No. 30E

THE CASE HISTORY

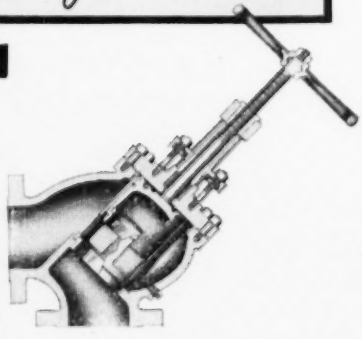
Thirty years' continuous service is by no means the record for Crane 250-Pound stop-check valves. But when 6 such valves, all installed in 1923, are still on the job, and still giving complete satisfaction, surely that's worthy of note. So well did these Crane No. 30E stop-checks perform right from the start, that 11 years later, in 1934, 2 more were put on boilers installed that year.

Here are 8 valves with a collective service record of more than 220 years. And in all that time, the only maintenance required was regrinding the seat of one valve.

It takes a lot of quality to deliver such valve performance with so little upkeep. That's why today, in face of rising maintenance cost, Crane quality is more than ever the first choice of the thrifty valve buyer.

THE VALVE

Simplicity and dependability are still the chief characteristics of Crane 250-Pound stop-check valves. They have just one moving part—the piston-type disc that operates in a removable liner, without chatter, vibration, or rapid wear. You'll have a safer power plant with these valves on your boilers, and they'll permit steam flow to the main header at minimum pressure drop. See your Crane Catalog or Crane Representative for complete information.



THE BETTER QUALITY...BIGGER VALUE LINE...IN BRASS, STEEL, IRON

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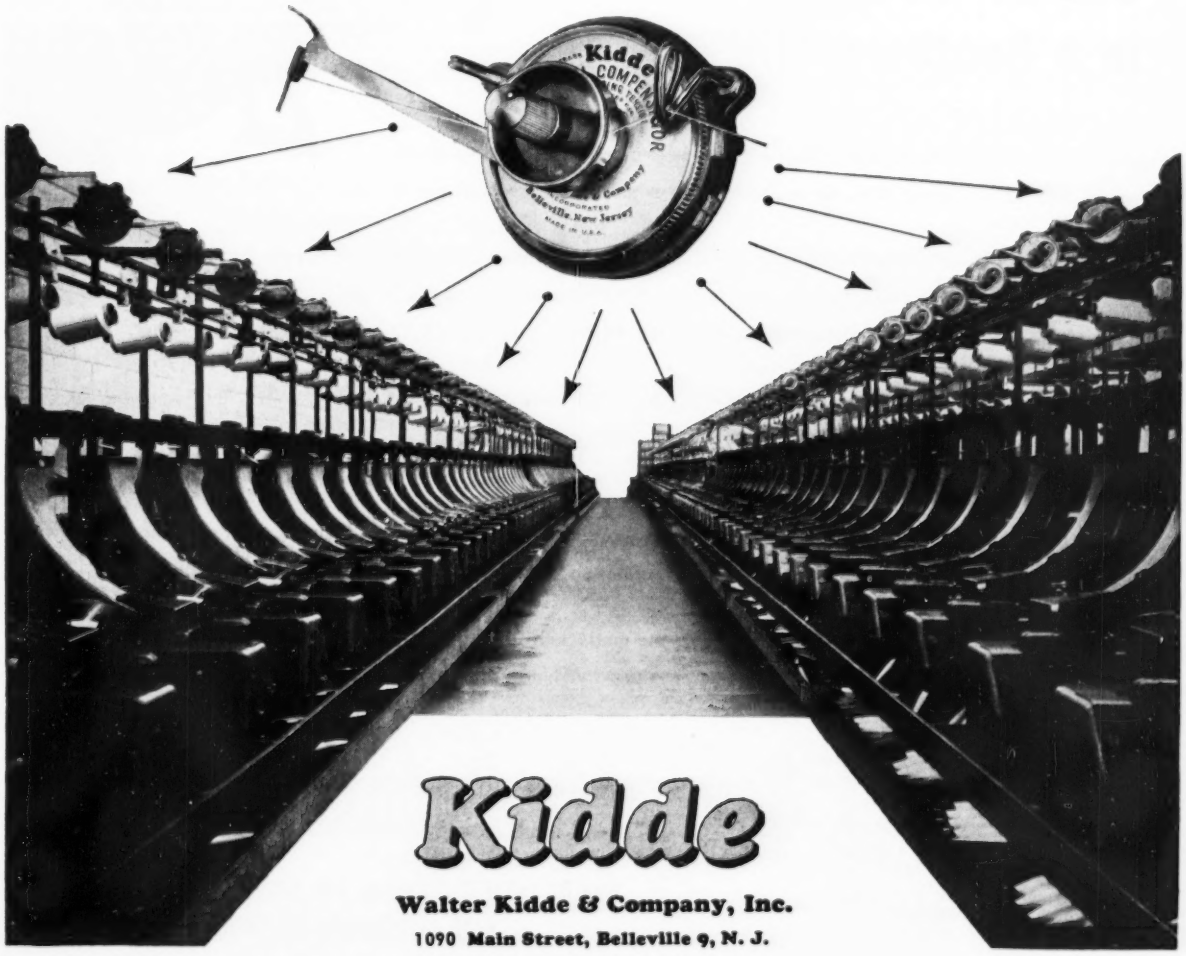
Branches and Wholesalers Serving All Industrial Areas

VALVES • FITTINGS • PIPE • PLUMBING • HEATING

How Quill Winders are Tension Controlled at the Schneider Mill

Over 500 leading textile mills depend on Kidde Compensators to take the guesswork out of tension control. Kidde Compensators are precision instruments made of the most modern non-corrosive materials. They're a cinch to set, and automatically compensate for a change in the coefficient of friction as well as back drag. If you use quill winders on any kind of synthetic yarn, count on Kidde Compensators to (1) assure uniform tension throughout the quill; (2) control tension at bunch; (3) prevent sloughing off due to soft quills; (4) relieve yarn tension at *start* of bunch, thereby promoting longer quill life. Write today for full information.



Kidde

Walter Kidde & Company, Inc.

1090 Main Street, Belleville 9, N. J.

For further information use Handy Return Card, Page 208

Slashing At Its Best on any type yarn

Battery of Cocker Slashers in a Southern Mill

These Cocker Slashers have several exclusive features which make them far superior to other machines. These are:

1. Differential Friction Compensating Control, which allows continuous high speeds without heating of Friction. This, combined with heavy construction which minimizes vibration, enables them to out-produce other type slashers.

2. The New Cocker Friction, which produces hard beams and gives 20% to 25% more yarn per loom beam.

Cocker Slashers have all of the other features required for fast and accurately controlled production . . . among which are graduated drives which permit changes in speed without overrun of beams or strain or jerk on the yarn, push-button control throughout, and finger-tip tension control.

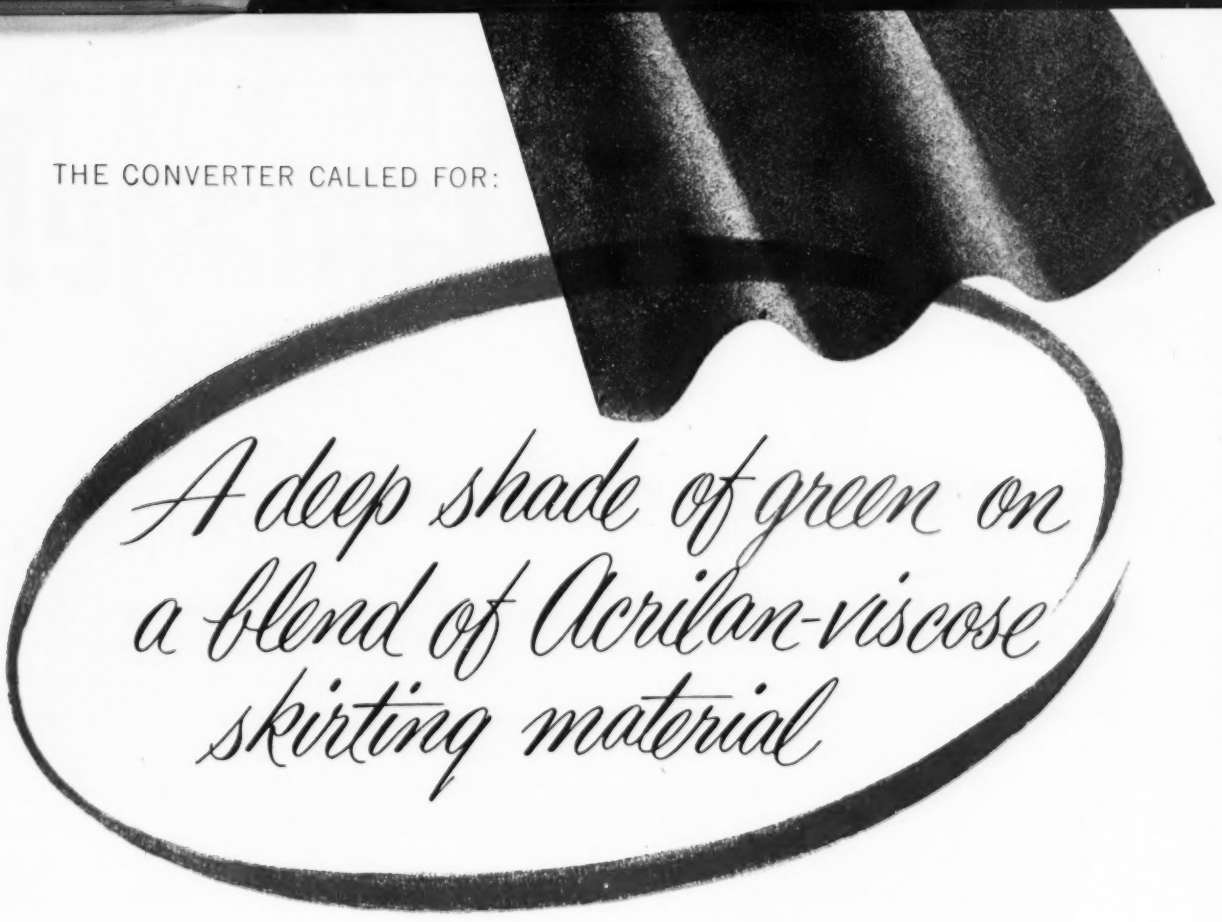
Cocker Slashers are made with 7, 9, and 11 Cylinders and are unexcelled for cotton, spuns, filaments, and other type yarns. Write or wire for full information.

THE LEADER
COCKER
AROUND THE WORLD

Machine and Foundry Co., Gastonia, N. C.

WORLD'S LARGEST DESIGNERS AND BUILDERS OF COMPLETE WARP PREPARATORY EQUIPMENT

THE CONVERTER CALLED FOR:



A deep shade of green on a blend of Acrilan-viscose skirting material

The dyehouse delivered a perfect job, thanks to Sandoz' Technical Service

The problem: Acid dyestuffs generally used for deep shades on Acrilan (1952 production) tend to stain viscose. Common salt generally used in dyeing viscose will often strip the dye off the Acrilan.

Sandoz suggested: Sandoz technicians, working closely with the customer, recommended a two-bath method. Scour with 2.00% Sandopan TN at 160° for 15 minutes. Rinse. Add 2.00% Alizarine Lt. Green GSN and 0.50% Xylene Lt. Yellow 2G. Raise to a boil for 1½ hours. Since it is desirable to keep acid to a minimum, add only 1.50% sulphuric acid in several portions. Rinse and soap off. These acid dyestuffs have the highest affinity for Acrilan, while the staining of viscose is prevented by scouring, rinsing and soaping.

Cross-dye for one hour at 200° using 1.00% Cuprofix Yellow GL, 2.08% Cuprofix Blue FGL, and 30% Glaubers salt instead of common salt which would strip the dye off the Acrilan.

• • •

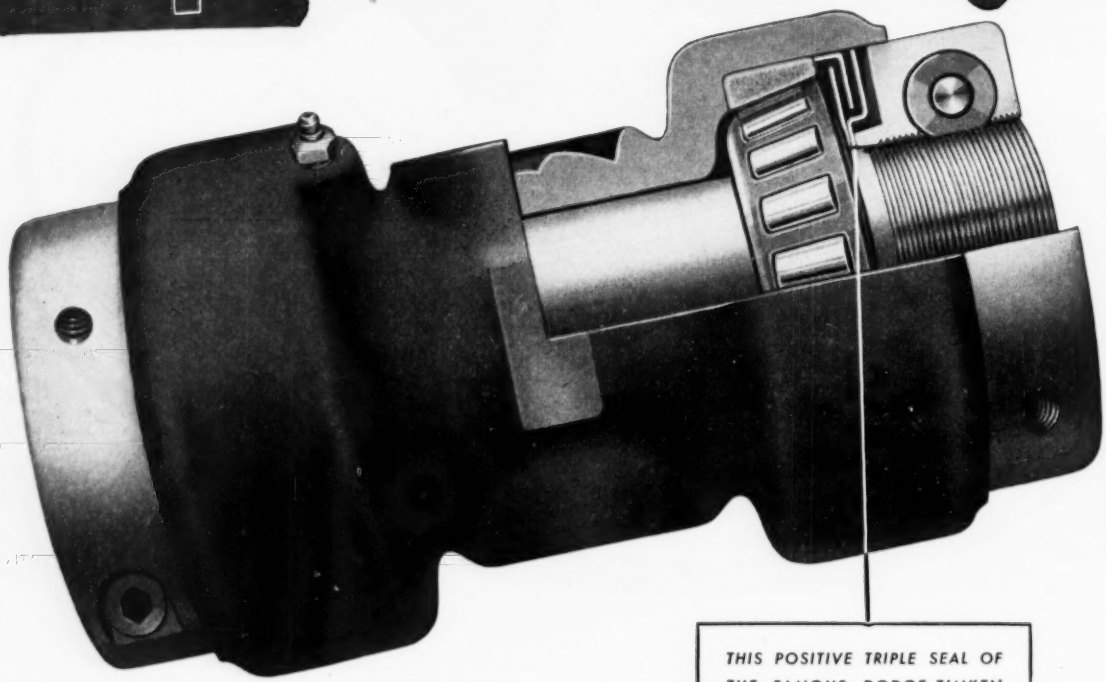
If you're confronted with a problem in the dyeing or treating of any of the new synthetics or blends, call on Sandoz' Technical Service. Our technicians may be able to help you in solving it. Call your nearest Sandoz branch in Hudson, Mass.; Fairlawn, N. J.; Philadelphia; Charlotte; Cincinnati; Los Angeles; Montreal or Toronto. Write to Sandoz Chemical Works, Inc., 61 Van Dam Street, New York 13, N. Y.

SANDOZ

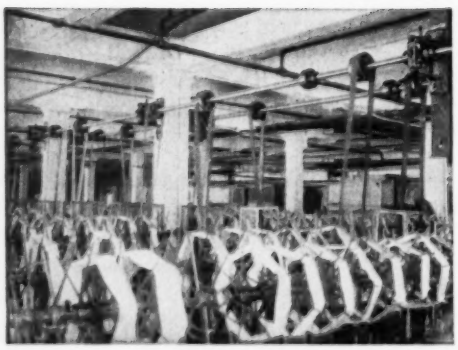
SANDOZ

THINKS AHEAD WITH TEXTILES

Stops Oil Damage!



THIS POSITIVE TRIPLE SEAL OF THE FAMOUS DODGE-TIMKEN TYPE C BEARING ELIMINATES OIL DRIP...HERE IS THE IDEAL BEARING FOR TEXTILE MILL USE!



This installation of Dodge-Timken Hanger Bearings protects quality and profits. Special seals prevent oil leakage on the product, reduce "seconds." Bearings remain properly lubricated, saving labor.

IS OIL DRIP eating holes in your profits? To keep the lubricant where it belongs—*inside the bearing*—switch to Dodge-Timken. These famous bearings, noted throughout the world for quality, have proved themselves in millions of industry's toughest jobs.

The type C Dodge-Timken Bearing is especially adapted to use in the textile field. Its indestructible steel seal positively prevents lubrication leakage—definitely cuts a mill's loss from "seconds."

Available from distributors' stocks—in shaft sizes from 1-7/16" to 3-15/16". Completely assembled, factory adjusted, pre-lubricated and ready to install on the shaft for a minimum of 30,000 hours of uninterrupted service. Call your nearest Dodge Transmissioneer. Or write us for detailed bulletin.

DODGE MANUFACTURING CORPORATION
3500 Union Street • Mishawaka, Indiana

CALL A DODGE TRANSMISSIONEER. He's factory-trained to help solve your power drive problems. Look for his name under "Power Transmission Equipment" in your classified telephone directory.

DODGE
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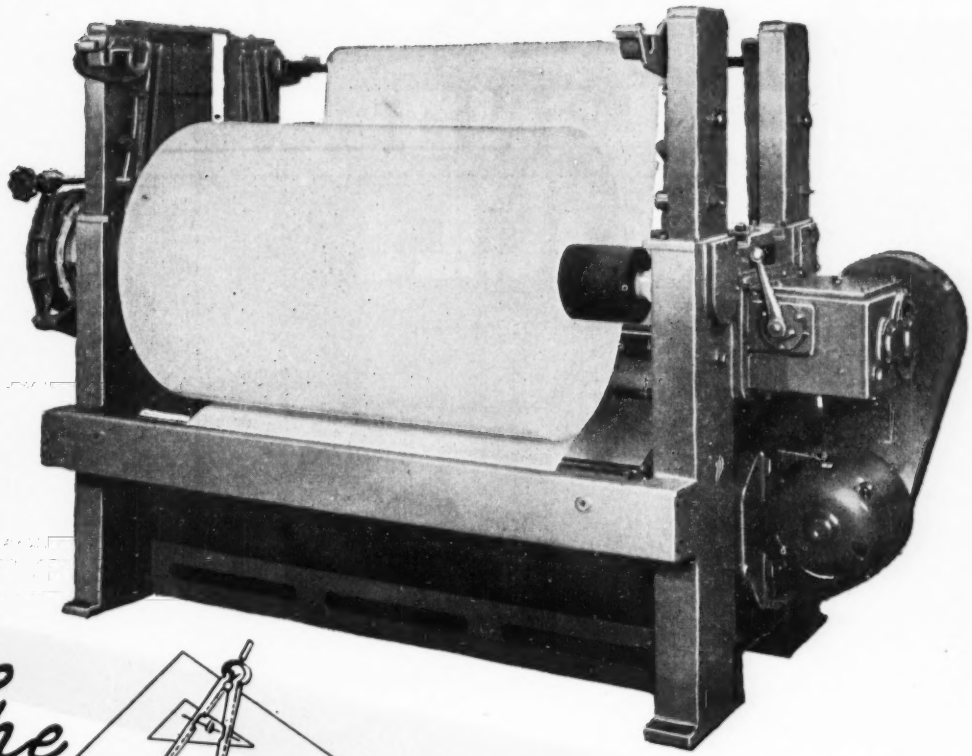
A NEW MASTERPIECE OF JIG DESIGN



The Dyemaster

Van Vlaanderen Engineers—long masters of jig design—have news, important news, for broadgoods dyers. A new jig for ALL FABRICS—cotton, silk, synthetics, blends—is now ready to help you get higher production and better dyed cloth at new savings in maintenance and repair.

This jig is the V. V. DYEMASTER, built to meet the exacting production requirements of American Dyers—a machine with American standards, parts and dimensions.

CONSTANT CLOTH TENSION. Practically none for sheers to full for cotton ducks.

CONSTANT CLOTH SPEED. Evener dyeing from end to end automatically.

"ROBOTROL" AUTOMATIC CONTROL. Starts, reverses and stops automatically.

HYDRAULICALLY DAMPED OSCILLATING EXPANDER ARRANGEMENT. No uneven dyeing due to strains from starts and reverses.

34" BATCH ROLLS. Larger batches than any other, easily and quickly loaded on angle slots with latch lock. Power or regular unloading.

The DYEMASTER is the most versatile jig ever built. Has every Van Vlaanderen patented improvement. Send for new folder giving a detailed description and specifications of this advanced machine.

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WORLD'S LARGEST MANUFACTURER OF MACHINES FOR PROCESSING MODERN FABRICS

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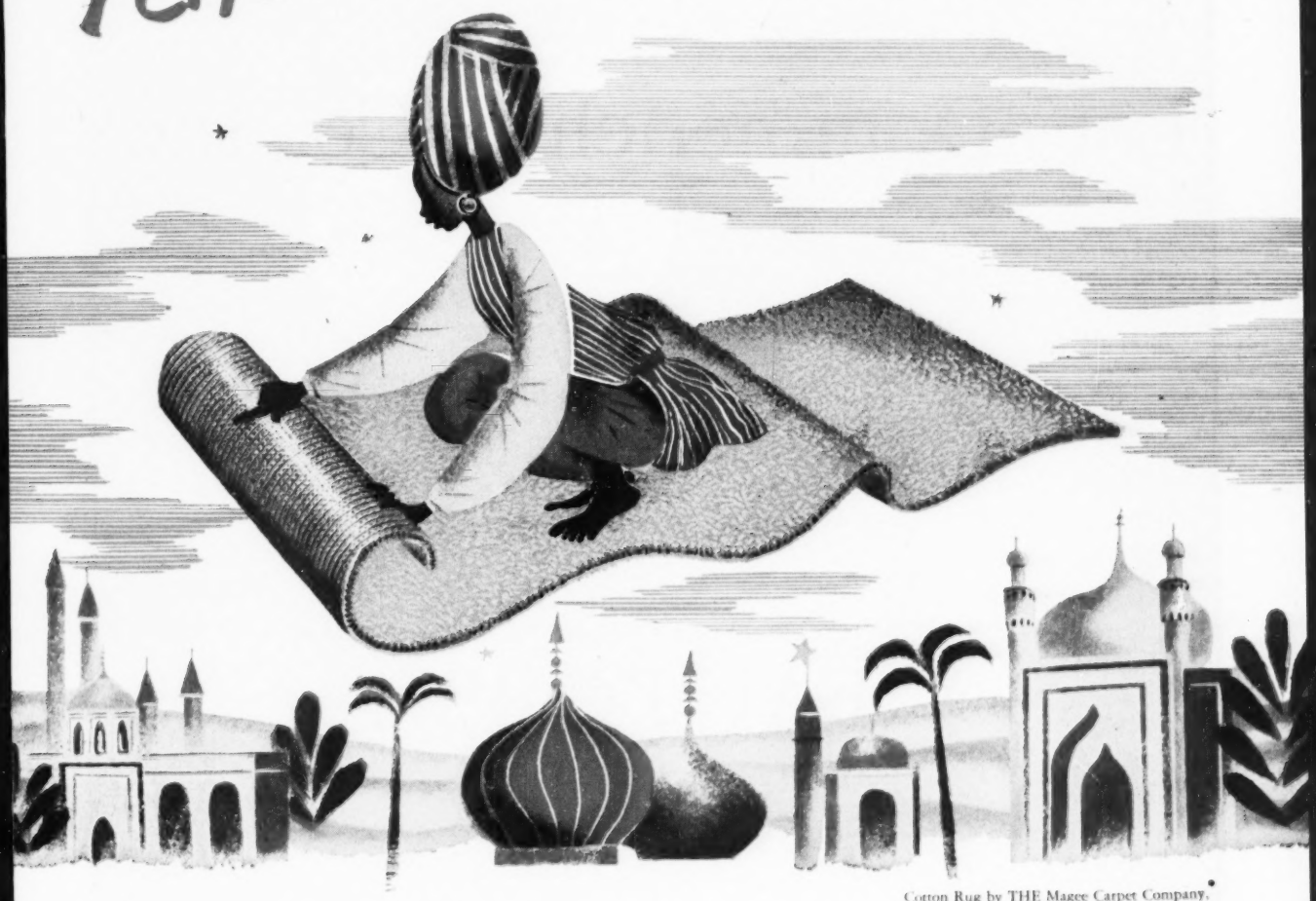
LOOK HOW LOTOL

Performs carpet magic!



Cotton Rug by THE Magee Carpet Company, in 15 beautiful colors.

Here's an achievement cotton carpet manufacturers everywhere will be glad to hear about. It means finer quality carpets *at no greater cost!*

"LOTOL"® is the magic compound — an amazing new latex from the laboratories of Naugatuck Chemical. Especially developed for cotton rug backing, it's now being used by Magee*. And look at the advantages it brings.

Locks pile for life! New LOTOL anchors the face yarn to the carpet backing *flexibly, permanently.*

Improves carpet properties! This remarkable new compound gives carpets finer "hand" or body, more resilience, greater weight, better feel, and good tacking strength. What's more, it prevents raveling, wrinkling, and slipping.

Impervious to the strongest dyes! Even 8 hours in boiling dye won't harm this backing. There's no discoloration or breakdown!

And the luxurious, odor-free carpets can be cleaned *time and time again* without danger of shrinking!

Wonder-working LOTOL compound, now available to the industry — is just one more reason why Naugatuck Chemical is first in latices — a reliable source of the finest basic materials for the finest finished products.

For more information on Lotol and the profitable possibilities it offers you for coating, bonding, or finishing products of all kinds, send the coupon below today.

*THE Magee Carpet Company, 295 Fifth Avenue, New York 16, N. Y.

Naugatuck Chemical

Division of United States Rubber Company

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Naugatuck Chemical, 3110 Elm Street, Naugatuck, Conn.

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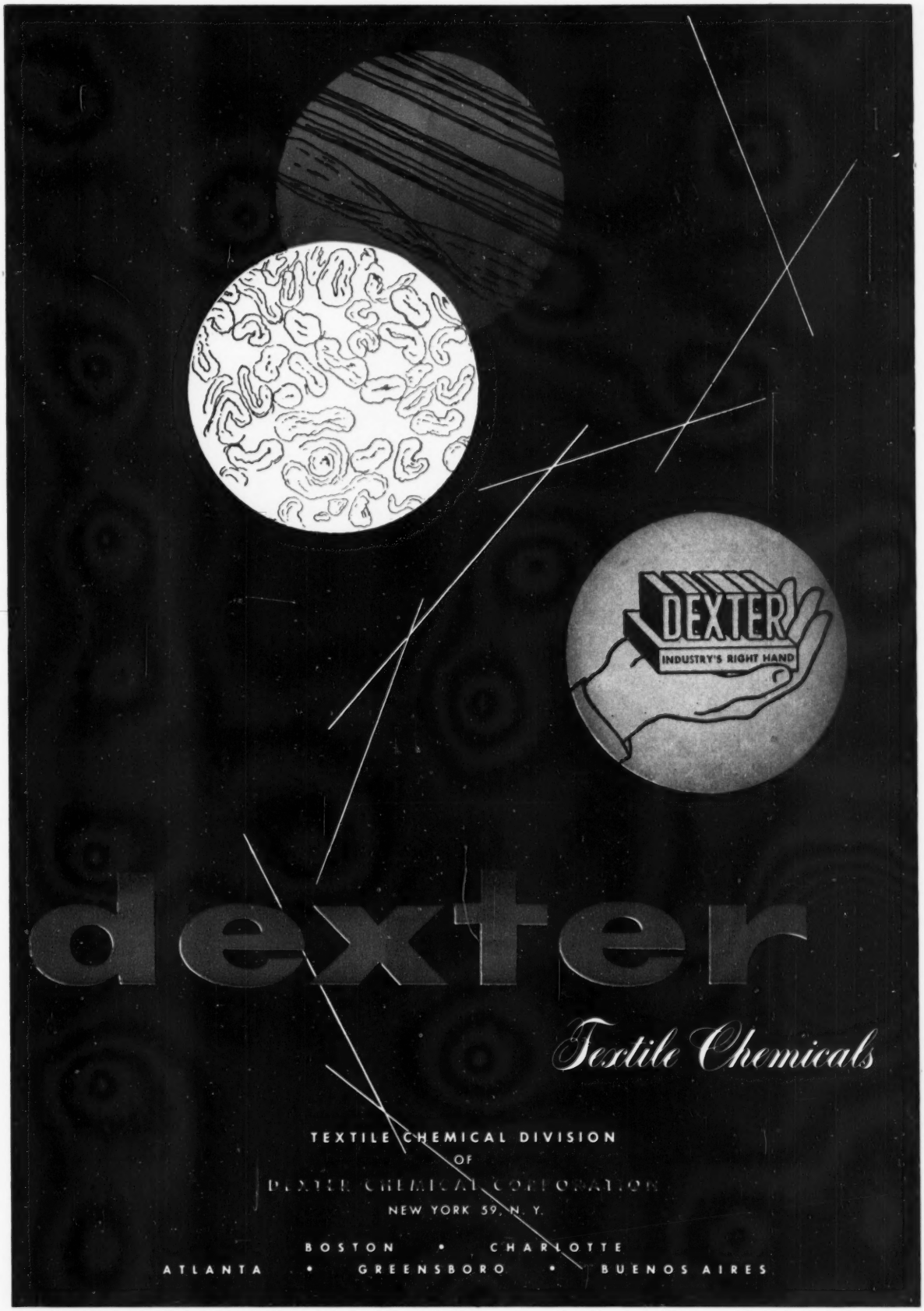
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BOSTON • CHARLOTTE
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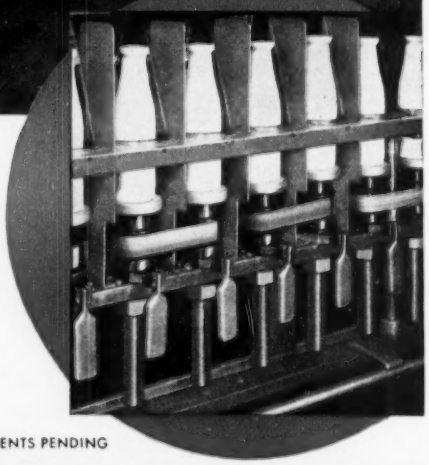
Marquette Roller Bearing Spindles

with FULL-FLOATING FOOTSTEP BEARING

FOR: COTTON • SYNTHETICS WOOL • WORSTED



This modern mill, which installed a test frame of Marquette Roller Bearing Twister Spindles in 1950, now has 11,824 Marquette Spindles in operation. Because they operate efficiently at higher speeds with no increase in power consumption, Marquette Roller Bearing Spindles always produce MORE YARN AT LOWER COST. We'll be glad to prove this through a test installation. Contact our home office or one of our representatives.

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The Marquette METAL PRODUCTS COMPANY

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News in Brief

Requests Tax Change. J. Craig Smith of Avondale Mills recently asked Congress to make a simple change in tax laws which would encourage manufacturers to buy new machinery faster and thus keep basic, heavy industries busy despite the gradual switch-over to a peace time economy. The cumulative effect of government tax policy on depreciation over the past two decades, he said, has been "to curtail incentives and reduce the otherwise attainable standard of living of the American worker." Mr. Smith brought out that business men who depreciate their equipment faster will reach the point sooner where they had charged off the entire cost of existing plant. Then, faced with the prospect of paying much higher taxes or buying more depreciable equipment, they would have the incentive to expand, or modernize further.

Credit Rating vs. Membership. A number of industrial concerns, when interviewing prospective employees, never mention a union—but they do run a credit rating. The practice is said to show a close correlation between bad credit rating and heavy union activity (a hot member). Hearing of this, a textile plant tested the plan for accuracy. It proved out 100% in that instance.

More Flammability Tests. Although the Flammable Fabrics Act does not become law until July 1, 1954, many fabric and garment manufacturers are showing a marked increase in testing apparel materials. Commercial Standard CS 191-53 is commonly used for these tests. Current research on manufacturing techniques and flameproofing methods may render highly flammable fabrics more serviceable and acceptable under the law, the U. S. Testing Company stated [see feature length article beginning on page 131 of this issue].

S. C. Led in Finished Yardage. A total of 9,826 million linear yards of cotton, silk, and synthetic fabrics was finished during 1952. The Bureau of the Census report indicates that this figure was 11 per cent above the 1951 figure. The increase since 1951 in bleached and finished goods amounted to only 2 per cent, while dyed and finished goods rose 14 per cent and printed and finished goods 23 per cent over this period. South Carolina led all other states in yardage finished in 1952.

Wool Associates Adopt Contract. The membership of the Wool Associates of the New York Cotton Exchange, Inc., has adopted a new wool contract. The principal changes from the old contract are a higher appreciation on the fine grades, and greater depreciation on the lower grades. The new contract will permit a maximum premium of 11% and a maximum

"Universal" Hotel Credit Card Plan

A "universal" type credit plan has been perfected for travelers, according to an announcement by Arthur J. Packard, president of the American Hotel Association.

The new credit system will be honored by thousands of hotels throughout the United States, and also in Canada, Mexico, Alaska, Puerto Rico, Hawaii and Bermuda, he said.

"This long-sought system will mean that the battle of the wallet bulge is over," Mr. Packard commented, "for it will enable the public to travel without an oversupply of identification papers, vouchers, and credit cards."

Two types of cards will be issued under this new credit system, Mr. Packard said. "Travelcards" will be issued to business firms for the use of their executives and other employees who travel. The Travelcard assures the holder of unlimited credit for the charging of hotel bills, including food and all customary hotel charges, plus check-cashing privileges within the limit of individual hotel policy. A fee of $5 a year is charged for each Travelcard issued.

The other type will be called "Chekards," issued to individuals who have satisfactory credit records. Chekards will provide check-cashing privileges at participating hotels; the holder may cash $100 worth of checks per week for a charge of $6 per year, $200 worth per week for $9 a year, and $300 worth per week for $12 a year.

Business firms may make applications for Travelcards, and individuals for Chekards, to hotels which are members of the American Hotel Association, or by writing the American Hotel Credit Corporation, Greenwich, Connecticut.

NEW

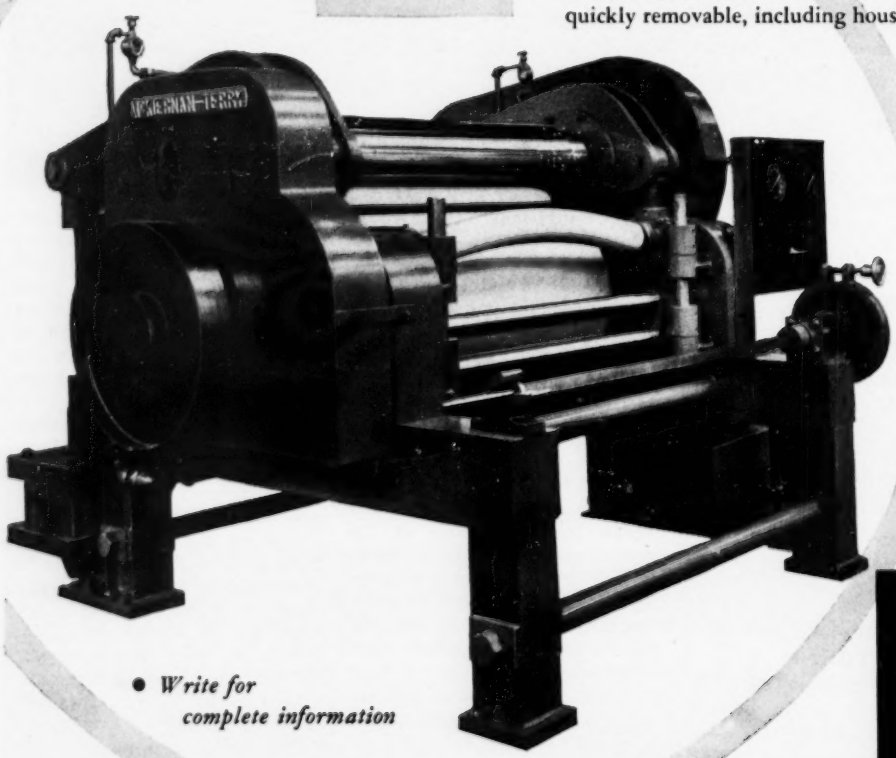
Multi-Purpose Calender

FRICTION ... SCHREINER ...
EMBOSSING SERVICES ...

all in a single machine

This new McKiernan-Terry machine is the most important advance in calender design in many years. Its functional design means quickest changeover for any of its three applications . . . it can be converted from one service to another in a few hours.

Suitable for pressures up to 75 tons, hydraulic or pneumatic . . . special oil seals to withstand high temperatures . . . lubricated by oil circulating and cooling system . . . heavy-duty anti-friction roll bearings which are easily and quickly removable, including housings, by hydraulic pressure.



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McKIERNAN-TERRY CORPORATION *Dover, New Jersey*

MK 603

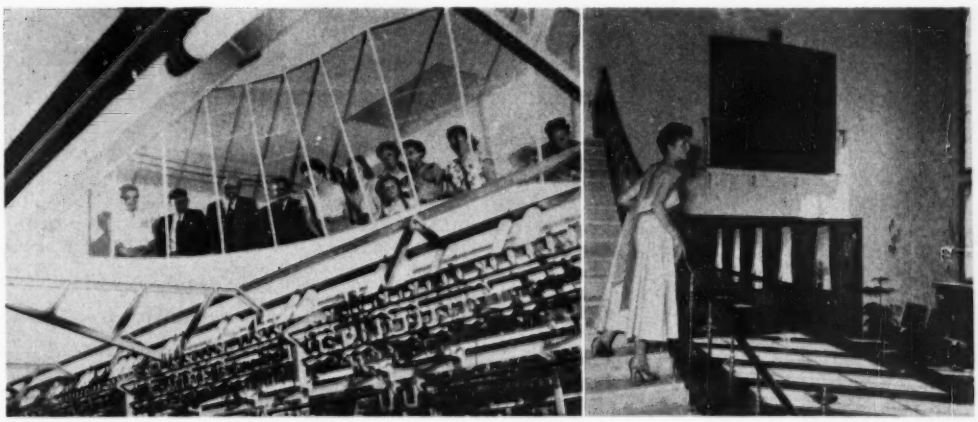
McKIERNAN TERRY

discount of 11% in relation to the Exchange Standard as compared to a premium of 6% and a discount of 6% under the terms of the old contract; also wools certificated for a period longer than six months shall carry a compulsory allowance by the seller.

New Hot-Air Slasher. A southern mill soon will install a hot-air slasher so designed that the intakes of air are at top and bottom of the slasher, with the heated air coming together at a central point and flowing with the yarn. Purpose of the design is to permit fine yarn to be run on the hot-air slasher.

You Can Lead a Horse to Water. . . . A study of voting practices in several mill communities of a southern state revealed that many of the most enthusiastic union members are not voting members in public elections, indicating to the source of study that politicians have been wasting a lot of time catering to union members. It was found that the rabid union members for the most part fail to register, or when poll taxes were required, they didn't pay them. A further point in the study was that politicians need not depend on "getting the union vote." Union members just don't vote the way they are told. (The point was proved in Senator Taft's reelection.)

Shorter Skirts Anticipated. Shorter skirt lengths this fall have been anticipated by American



Visitors are welcome in this full-fashioned hosiery mill. They can look down from observation room above (left photo) and see how stockings are made. Portion of modern board room is pictured at right.

A New Attraction at Berchtesgaden

For the many thousands who visit Germany and what used to be Hitler's retreat, Berchtesgaden, yearly there is an added attraction — a modern full-fashioned hosiery mill "designed with visitors in mind" is operating in the vicinity.

Upon entering the mill, the visitor passes through a most attractive reception hall where he finds overhead a red Perlon cord which serves as his "guide" on the tour through the plant. By following this red cord, the observer is guided from department to department along glass-walled corridors from which he can look down and see the Perlon stockings being manufactured. He does not interfere with manufacturing operations and can stay as long as he wishes at any one process; he cannot get lost if he follows the red cord above.

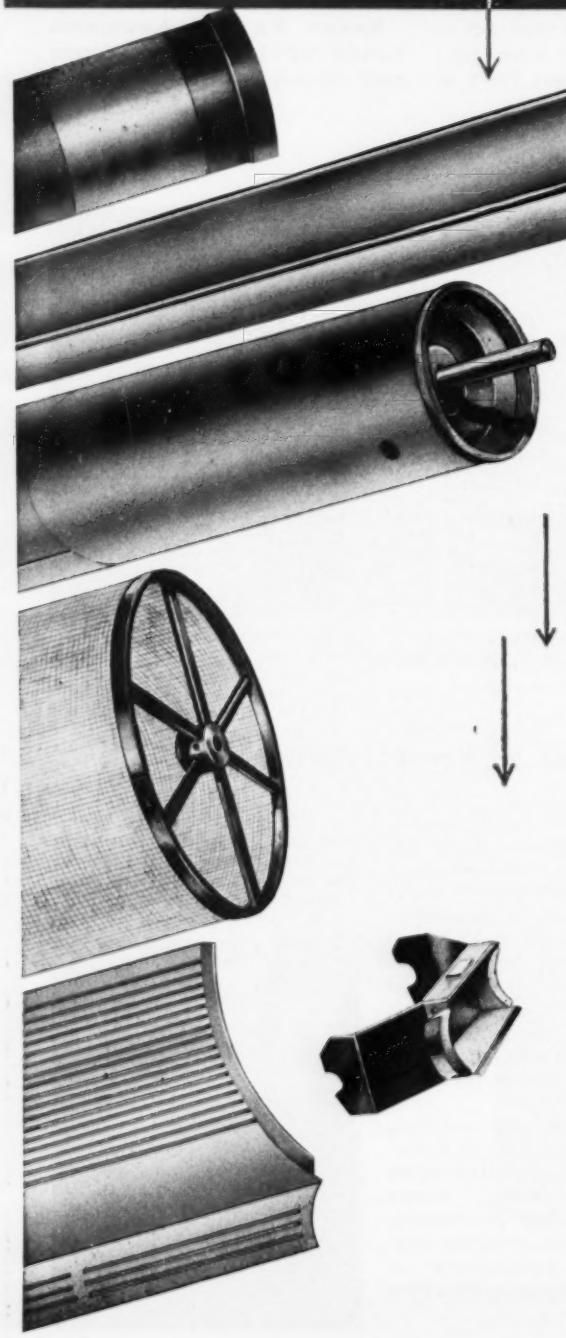
Manufacturing processes from knitting through packaging of the hosiery for shipment can be seen. When the visitor leaves the shipping department, he is guided into the board room where he is confronted with murals depicting the history of the stocking.

Designed by the architect, Dr. Ing. Walter Born of Frankfort-am-Main, the mill is called Feinstrumpfwirkerei Hans Thierfelder after its founder, who is reported to be the largest single manufacturer of women's stockings in West Germany.

The "Sun-Arwa" Perlon stockings manufactured at this plant are transparent to the tip of the toe as shown in the photograph below.

WHERE PRECISION COUNTS —

Jenkins adds up to Greater Savings



Total the advantages of Jenkins developed and tested methods of manufacture and re-building: picker screens of efficient design, careful manufacture; uniformly dimensioned and dynamically Balanced Cylinders for spinning or twister frames; card screens of new, super-smooth grid bar design. These are assembled and fabricated by personnel experienced in the textile machinery field, supplied to your most urgent needs by Jenkins' prompt service.

Beginning on the planning table, each step in the manufacture of Jenkins products is precision controlled. Such "Job Engineering" builds long-term economy, for 38 years has added up to . . . GREATER SAVINGS.

JENKINS
METAL SHOPS, Inc.
GASTONIA, NORTH CAROLINA

hosiery manufacturers, according to NAHM. Stockings are being offered this fall in lighter deniers and with a wider selection of colors than ever before. Historically, the length of skirts has been more dependent upon the quality of hosiery available than on the whims of designers, the association recently revealed.

Studies Korean Rehabilitation. A textile industry representative, Robert C. Jackson, executive vice-president of the American Cotton Manufacturers Institute, was a member of the special mission to Korea which made a three-week study of that country's relief and economic problems recently.

Magnetic Anisotropy — Cotton Research Tool. Research on improving the uses of cotton fiber has led to measurements of the magnetic anisotropies of cellulosic fibers (their magnetic properties as measured in different directions). These measurements have been evaluated as a tool for characterizing molecular orientation of the fibers by chemists of the Southern Regional Research Laboratory. The measurement was found promising for the purpose, but further study is needed before the method may be used generally as a measure of orientation.

Canadian Seminar Date Set. The Textile Technical Federation of Canada has announced that the

"Because I believe in free labor and free enterprise I am today signing the 'right-to-work' bill."
GORDON PERSONS
Governor of Alabama

A Message from the Governor to the Legislature of Alabama

I have given a great deal of thought to the "right-to-work" bill (H. 222) which passed the House by 67 to 24 and the Senate 23 to 9.

Mainly, this bill provides that no person shall be denied the privilege of working because he does not belong to a labor union and that no firm shall be forced to deduct union dues from the salary of the worker.

Our labor union friends contend, and rightfully so, that unions have helped make possible better working conditions and higher wages. Because of this they feel that all employees in a unionized plant should be forced to join the union and that union dues be deducted from pay checks in what is known as the "check-off" system. Union officials refer to those who do not desire to belong to the union as "free riders" because such non-members obtain benefits of unions, without helping pay for such benefits.

Along with this same line of reasoning is the fact that our churches are the greatest organizations in the world. They have done much for all mankind. Yet, no citizen is forced to belong to any church or required to pay church dues.

Unquestionably the American Legion, the VFW and other service organizations have done much to provide benefits to the veterans. Yet, it is not required of any veteran that he be forced to join any of the service organizations or required to pay dues to any of them.

As a matter of fact, individual labor unions themselves have the right to say whether they belong to the AFofL, the CIO or, in the case of others such as the railroad organizations and the UMW to remain free and independent unions.

The Alabama Farm Bureau Federation has done much for our farmers. Yet, no farmer is forced to be a member of the Farm Bureau or to pay dues to them unless he so desires.

The Alabama Education Association is the organization which represents school teachers, and while the AEA has worked to provide for higher wages and safeguard working conditions for the teachers, those who do belong, do so of their own free will. They are not forced to join the AEA nor do they have dues deducted from their salary checks.

The various business organizations, including those representing automobile dealers, grocery stores and drug stores in Alabama have unquestionably been of much assistance to their members. Yet, no business firm or factory is forced to become a member of any organization.

Many other such examples could be given. It may well be that workers in some of our northern states do not object to being required to join the labor organization in their plant and have no feeling about being forced to have dues deducted from their pay checks.

However, in the South we have free and independent workers. Many wish to join labor organizations and do so. Certainly that is their privilege. On the other hand, many do not like the idea of being forced to join any labor union as a condition to work. Neither are they agreeable to having union dues deducted from their salary checks.

Those who first settled in our great country did so because they wanted to. It has always been a tradition in America that any man could do as he pleased so long as he did not violate the laws of our land.

In my opinion, all of our labor unions will be far stronger and the members in them will have a far greater interest and respect in the organizations if membership can be shown to be desirable and they are not forced to join.

Because I believe in free labor and free enterprise I am today signing the "right-to-work" bill.

GORDON PERSONS
Governor of Alabama

SERVING THE TEXTILE INDUSTRY SINCE 1899

Precision Paper Products

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PAPER CARRIERS
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CONES by Sonoco—standard of the world for more than 50 years. Sonoco cones are supplied with various surfaces and can be printed inside or out and are available with notches, scores, perforations, and in many engineered nose or tip designs in special tapers. Lacquer tipping, dyed base and tip, and striped base can be furnished on cones as a means of quick identification.

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MAIN OFFICE—HARTSVILLE, S. C.

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PHILADELPHIA, PA. AKRON, IND. GARWOOD, N.J. GRANBY, QUEBEC

DEPENDABLE SOURCE OF SUPPLY

Fourth Canadian Textile Seminar will be held at Queen's University, Kingston, Ontario, September 9-12, 1954.

Printed Corduroy. Bold brilliant screen prints are now being offered for resort and spring on Favoroy, a fine pinwale corduroy construction announced by the Crompton Richmond Co. Four patterns are available. Screen prints are new in corduroy; however, many color combinations are possible with the new screen printing process, according to an announcement.

Accidents Costly. Occupational accidents in 1952 cost American industry $45 per person, according to the National Safety Council's statistical annual, "Accident Facts." This edition points out that 15,000 persons were killed and 2,000,000 injured while at work in 1952. The total time lost as a result of occupational injuries reached the staggering total of 250,000,000 man-days.

Nylon Mail Bags. In an effort to cut air mail costs, nylon air mail bags have been tested by the Post Office Department. If nylon bags replace others in use, the department would save about $1 million a year, estimates indicate.

ACMI Works With Colleges. The American Cotton Manufacturers Institute, Inc., now has a committee to provide liaison between the textile industry and the textile colleges and vocational schools. The organization has expressed the hope that the committee will serve as a medium through which the curricula of the various textile educational institutions may be even more closely geared to the needs of the industry.

Blends Must Be Labeled. A Federal Trade Commission official has warned wool manufacturers that blending a small percentage of nylon with their materials and calling the finished product "100 per cent cashmere" and "100 per cent wool" are guilty of misbranding. The FTC requested that the NAWM help in disseminating this opinion.

75-Gauge Full-Fashioned Machine. Wildman Manufacturing Co. of Norristown, Pa., is producing a single-head 75-gauge full-fashioned knitting machine. A company spokesman has indicated that one of these fine gauge machines is in operation at Dexdale Hosiery Co., Lansdale, Pa.

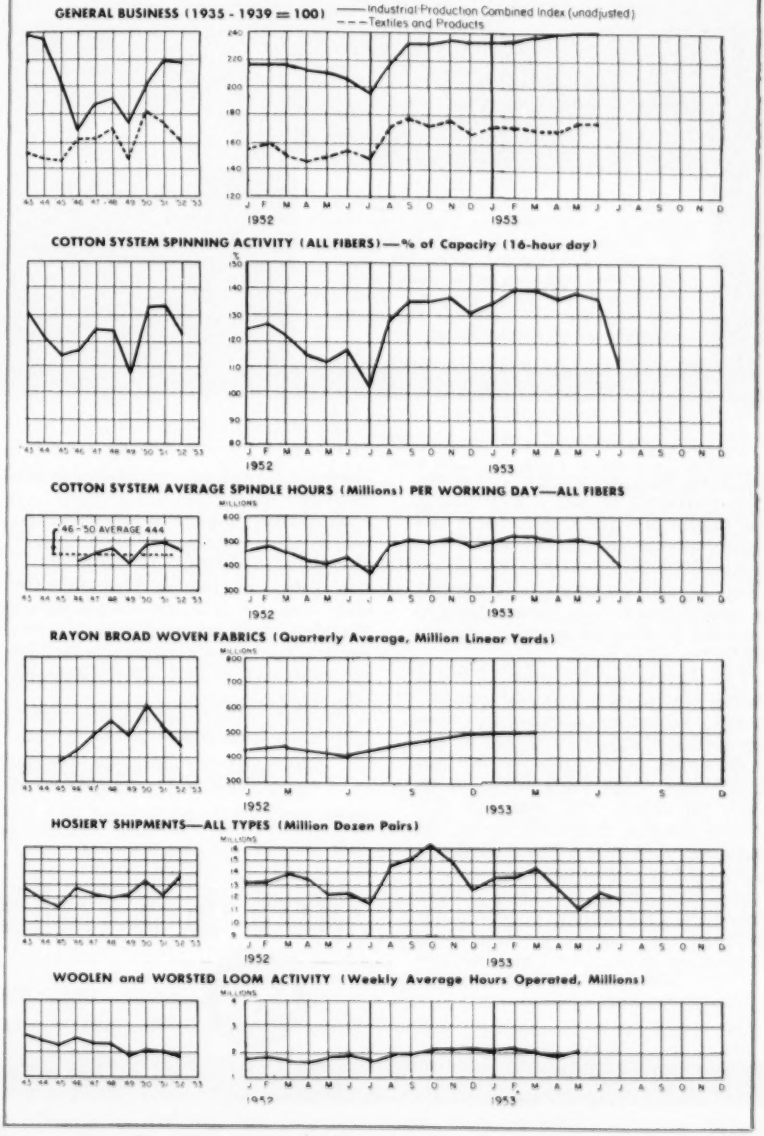
No Bar to Bargaining. An existing collective bargaining contract ceases to be binding on employees who designate a new representative in an NLRB election during the contract term, and may be

(Continued on page 230)

News in Brief

Textile Industry Activity Charts

Source of information: Bureau of the Census, U. S. Department of Commerce; National Association of Hosiery Manufacturers.


GENERAL BUSINESS (1935 - 1939 = 100)
Industrial Production Combined Index (unadjusted)
Textiles and Products
COTTON SYSTEM SPINNING ACTIVITY (ALL FIBERS)—% of Capacity (16-hour day)
COTTON SYSTEM AVERAGE SPINDLE HOURS (Millions) PER WORKING DAY—ALL FIBERS
46 - 50 AVERAGE 444
RAYON BROAD WOVEN FABRICS (Quarterly Average, Million Linear Yards)
HOSIERY SHIPMENTS—ALL TYPES (Million Dozen Pairs)
WOOLEN and WORSTED LOOM ACTIVITY (Weekly Average Hours Operated, Millions)
1952
1953

Beam and package dyeing at Dan River Mills is an all-Stainless Steel operation

ONE OF THE 80", four-beam machines at Dan River Mills is shown here in the foreground with a set of four 34" single-beam kiers, operated as a unit to the left. In the background, operators are unloading a triple set and a double set of kiers. All machines were made by Gaston County Dyeing Machine Company, Stanley, N. C.

With the proportion of woven patterns steadily increasing, the beam and package dyeing departments at the Schoolfield Division of Dan River Mills, Inc., Danville, Va., has been expanded greatly in recent years. And the equipment involved in this expansion is nearly 100% Stainless Steel.

The equipment includes 12 beam dyeing machines ranging in capacity from 1 to 6 beams per machine, dyeing kettles ranging from 32" to 80" in diameter, 8 package dyeing machines with capacities from 84 to 1,080 packages, and package dye kettles ranging from 26" to 56" in diameter. Also there are 5 Boil-out kettles 56" in diameter.

Dan River Mills also have at their Research Department three one-package, one 6-package and three 28-package dyeing machines. All dye beams and package carriers are made from Stainless Steel.

Stainless Steel was selected primarily to eliminate contamination of the yarn in dyeing. It can't affect the colors, no matter how delicate they may be. But the durability of Stainless Steel entered into the selection, too, for the Stainless kettles are expected to last three times as long as other types.

Freedom from contamination and long life are only two of the important benefits resulting from the use of Stainless Steel in textile processing. In addition, Stainless Steel possesses a smooth, dense, durable surface which can be cleaned easily, thus reducing the time for clean-ups and changeovers.

You'll find Stainless Steel a paying investment for a wide range of machinery in your plant. And for the finest performance, insist that your fabricator use perfected, service-tested U·S·S Stainless Steel.

UNITED STATES STEEL CORPORATION, PITTSBURGH · AMERICAN STEEL & WIRE DIVISION, CLEVELAND
COLUMBIA-GENEVA STEEL DIVISION, SAN FRANCISCO · NATIONAL TUBE DIVISION, PITTSBURGH
TENNESSEE COAL & IRON DIVISION, FAIRFIELD, ALA. · UNITED STATES STEEL SUPPLY DIVISION, WAREHOUSE DISTRIBUTORS
UNITED STATES STEEL EXPORT COMPANY, NEW YORK

U·S·S STAINLESS STEEL

USS

SHEETS · STRIP · PLATES · BARS · BILLETS
PIPE · TUBES · WIRE · SPECIAL SECTIONS

UNITED STATES STEEL

AN EXECUTIVE Views

THE NEWS IN TEXTILES

Prepared by a man who is closely identified with the textile industry.

The Next Session of Congress May Bring....

Back to the Wagner Act. From the standpoint of government affairs, one of the most startling news breaks of the year came several weeks ago when the "Wall Street Journal" broke the story that the White House was about to send to Congress a message proposing certain drastic changes in the Taft-Hartley law. According to the paper, a message signed by President Eisenhower had been prepared and had been sent secretly to certain members of the House and Senate as a sort of premier showing of what would go to all members of the House and Senate within the next few days.

According to the story, the death of Senator Taft, which occurred at about that time, made it inappropriate for the message to be sent, and during the weekend which followed the news leak occurred.

If this was, indeed, the message which the President intended sending to Congress and if it had been prepared with his full knowledge and approval, then there is little wonder that he was reluctant to distribute it immediately after the passing of one of the strongest advocates for fairness in labor-management relations which this country has ever seen. The "Wall Street Journal" also printed the purported text of the message to Congress and, whether or not the President personally had studied the draft, it is at least indicative of the thinking which may permeate the next session of the nation's legislative body.

State Right-to-Work Acts

A number of the proposals would greatly strengthen union security, and one of the most important of these was that which would have repealed the state right-to-work laws which exist in some twelve states. The present Taft-Hartley provision that state right-to-work laws should prevail would be eliminated, under the White House proposal, and in its place would "be included a general rule fixing the dividing line between federal and state jurisdiction. Such a rule should recognize the paramount authority of the federal law in the interest of uniformity throughout the United States."

We have already had a taste of the sort of "uniformity" the federal government would like to see in labor-management relations and most of us have had enough of it.

Secondary Boycotts

In another proposal the White House message points out that the present Taft-Hartley Act has been interpreted to permit "concerted activities" directed at work which the employer has "farmed out" to other employers. It points out, however, that this interpretation should be clarified and "affirmed" by amendment.

This would seem to indicate that if you are operating a small yarn mill and are supplying yarn on a subcontract to a large weaver, and the weaver is in the middle of a labor dispute, that picketing and other strike activities could be applied to your small yarn mill, as well as to the large weaver. This would be in spite of the fact that you might never have heard of the union before.

The proposed change regarding secondary boycotts would have rather drastic repercussions in the construction industry and, while we in textiles are not directly concerned with construction, we long ago realized that industrial activities are "one world" and whatever happens in one segment will be felt in another. We have found this particularly true with regard to labor-management relations.

The White House statement goes on to say that in certain industries the individual working man and working woman does not have a proper protection of rights because the present union shop provision is that you must join the union within thirty days or lose your job. The statement explains that some people do not work for as long as thirty days in industries whose labor is of a transient nature, and that many of these people thus do not join the union.

Stated another way, and *not* in the words of the White House, under the present law, too many fish are escaping the net because they do not stay in the water long

"He's been here so long the boss let's him do the job his own way."

Sure, Grandad's way of doing things was probably the best . . . in Grandad's day.

Today we have faster, better, more efficient ways of doing things. SEYCO products keep up with today's progress.

And the SEYCO lab is working on tomorrow's processes.

SEYCO Products

WARP SIZING
- Softeners
- Binders
- Penetrants
- Ty-In Penetrants
- Shuttle Dressing

WET PROCESSING CHEMICALS AND AUXILIARIES
- Dye Assistants
- Penetrants
- Rewetting Agents
- Sanforized Fabric Oils
- Detergents
- Scouring Agents
- Softeners

NIAGARA TWIST-SETTER
- Yarn Conditioning Penetrants

HEADQUARTERS FOR TEXTILE CHEMICALS

SEYDEL-WOOLLEY & CO.

TEXTILE CHEMICALS

748 RICE STREET • ATLANTA, GA.

SEYCO

PENETRANTS • SIZING • SHUTTLE DRESSING • SOFTENERS • ALKALIS • TWIST SETTER MACHINES •

enough.

The Administration would close this loophole by changing the present thirty-day provision to seven days in industries such as construction, amusement, and maritime or other industries in which "employment is primarily casual, temporary, or intermittent, or where it is impractical to hold an election in accordance with the Act." This last phrase is rather broad and seems to indicate that if the net is not long enough to catch the fish then the lake will be dynamited.

If he were alive today Senator Wagner would be very happy because what the White House proposes is virtually a return to the old and discredited Wagner Act of the Roosevelt Administration. It is almost unthinkable that Dwight D. Eisenhower, who was elected in spite of the violent opposition of organized labor, should now court that vote and destroy the Taft-Hartley Act. It is also somewhat amazing to realize that all of this came about almost within hours after the death of Senator Taft.

The current feeling is that during the Dog Days of late summer and early fall the President, his congressional advisors, and the members of his Cabinet will watch with keen interest the size of the mail bags which are deposited at the White House. They will discuss the proposed changes in Taft-Hartley and they will weigh the volume of public opinion both for and against the changes. If there should be a special session of Congress in the fall, then that session probably would receive from President Eisenhower the results of these meditations.

Whether or not they would be in the form of the alleged "message" which we have discussed here, is a matter for conjecture. There is no conjecture about the fact, however, that if the proposals should be enacted into law we could say goodbye to the Taft-Hartley Act and hello to the Wagner Act.

While you are at the football game this Saturday, what will the people on the other side of the street be doing? By radio and television, newspaper and magazine articles, will they be advocating the adoption of these principles? There can be no conjecture about that. The time to take your pen in hand is now.

Mount Hope Case

The case of the Mount Hope Finishing Co., Inc., Butner, North Carolina, has caused considerable furor in the textile industry. This

(Continued on page 233)

Oct. 9—Fall meeting, **Carolinas Section of the American Society for Quality Control**, School of Textiles, N. C. State College, Raleigh, N. C.

Oct. 12-14—Annual forum, **Packaging Institute**, Hotel Statler, New York, N. Y.

Oct. 14-22—**"Textile Recorder" International Exhibition of Textile Machinery and Accessories**, Belle Vue, Manchester, England.

Oct. 15-16—47th annual meeting, **North Carolina Textile Manufacturers' Association**, Carolina Hotel, Pinehurst, N. C.

Oct. 17—Fall meeting, **Eastern Carolina Div., STA**, Erwin Mills Auditorium, West Durham, N. C.

Oct. 19-23—**41st National Safety Congress and Exposition**, Chicago, Ill. Sessions on industrial safety will be held in Conrad Hilton, Congress, Morrison, and Hamilton Hotels.

Oct. 20-22—**Industrial Packaging and Materials Handling Exposition**, Boston (Mass.) Mechanics Building.

Oct. 24—Fall meetings, **Piedmont Div., STA**, Hotel Hickory, Hickory, N. C.

Oct. 29-30—Annual convention, **Carded Yarn Association**, Grove Park Inn, Asheville, N. C.

Oct. 29-30—**AIEE Textile Industry Conference** on Electrical Equipment, North Carolina State College, Raleigh, N. C.

Oct. 31—Fall meeting, **South Carolina Div., STA**, Textile School, Clemson College, Clemson, S. C.

Nov. 4-6—17th annual **Time and Motion Study and Management Clinic**, sponsored by Industrial Management Society, Sheraton Hotel, Chicago, Ill.

Nov. 9-12—**8th Refrigeration & Air Conditioning Exposition**, Public Auditorium, Cleveland, Ohio.

Nov. 12-13—Annual meeting, **Textile Research Institute**, Commodore Hotel, New York, N. Y.

Nov. 30-Dec. 5—**24th Exposition of Chemical Industries**, Commercial Museum and Convention Hall, Philadelphia, Pa.

1954

Jan. 25-28—**Plant Maintenance & Engineering Show**, International Amphitheater, Chicago, Ill.

Feb. 4-6—**Technical meeting, Textile Div., American Society for Quality Control**, School of Textiles, N. C. State College, Raleigh, N. C.

Feb. 25-27—Annual convention, **Phi Psi national honorary textile fraternity**, Carolina Hotel, Pinehurst, N. C.

Mar. 18-20—Annual meeting, **Alabama Cotton Manufacturers Association**, Hotel Buena Vista, Biloxi, Miss.

April 7-10—Annual convention, **Cotton Manufacturers Association of Georgia**, Boca Raton (Fla.) Hotel and Club.

April 22-24—Annual convention, **American Cotton Manufacturers Institute**, Jung Hotel, New Orleans, La.

April 26-30—**American Textile Machinery Exhibition** (sponsored by American Textile Machinery Association), Atlantic City (N. J.) Auditorium.

May 5-6—Spring meeting of **The Fiber Society**, Institute of Textile Technology, Charlottesville, Va.

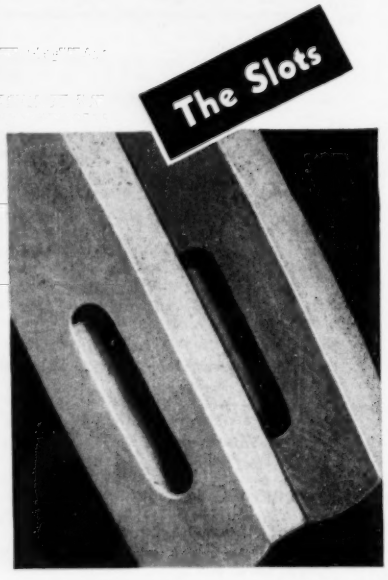
June 10-12—Annual meeting, **Southern Textile Association**, Ocean Forest Hotel, Myrtle Beach, S. C.

Sept. 9-12—Fourth **Canadian Textile Seminar**, Queen's University, Kingston, Ontario, Canada.

Oct. 4-9—**18th Southern Textile Exposition, Textile Hall, Greenville, S. C**

JACOBS

Reinforced "VERYBEST" Lug Straps are REINFORCED- at ALL 3 places!



JACOBS

Extra material — lots of it — is built in at each of these three wear and stress points, and only heat treated rivets are used.

The short "Verybest" Lug Strap, too, is reinforced at *all three* places, and is a fit working mate for the long Reinforced "Verybest" Lug Strap. Together, they'll give you a guarantee of real service.

THE BULLARD CLARK COMPANY

JACOBS

SOUTHERN Division Charlotte, N. C.

NORTHERN Division Danielson, Conn.

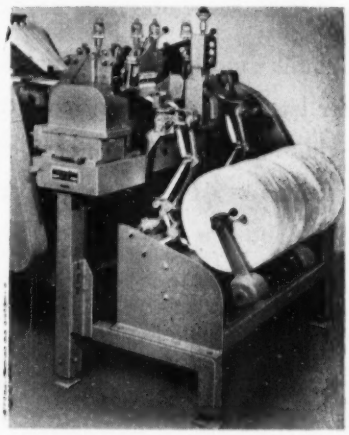
NEW Equipment AND MATERIALS

Balling Head Pin Drafter Features Higher Capacity, 28"-High Doffing

A boost of more than 100% in sliver processing capacity and 28"-high doffing are the result of design refinements in the Warner & Swasey Balling Head Pin Drafter which greatly extend its field of usefulness.

The development of special, heavy-duty faller bars and a deep-fluted inner nip roll increase the machine's capacity up to 2400 grains per yard maximum entering weight per head. Delivery capacity is 3½ ounces per five yards, or 306 grains per yard. The double-meche unit delivers two 1½-ounce-per-five-yard slivers to each ball. This extension of the machine's yarn handling capacity suits it to use in dye houses and by commission top makers, where it eliminates two operations of heavy gilling.

These new high-capacity components, incidentally, are applicable to any model of the pin drafter, making it possible for the machine to produce sliver ranging all the way from 30 to 300 grains by merely changing faller bars and making



proper settings.

The elevated doffing level is the result of a new knee-action compensating mechanism which has permitted raising the balling head without increasing sliver tensioning as the condenser travels from side to side. Raising the balling head to the 28" level without such compensation would produce a large angle of sliver traverse resulting in as much as a 10% lengthening of sliver at the outer extremes of the ball. The new linkage completely eliminates any such possibility by extending its knee as the traverse reaches the extremes, and shortening it as the traverse centers to maintain effectively equal sliver tension at all times during ball winding. Meanwhile the new, higher mounting makes it much easier to doff and handle balls without bending or stooping.

The new head also incorporates an underfed wind which introduces a slight amount of false twist to wind a tighter, higher quality sliver and a denser, more compact ball. The ball, weighing 21 pounds in wool, higher in synthetics, likewise unwinds more easily, improving subsequent processing.

The Warner & Swasey Co., 5701 Carnegie Ave., Cleveland 3, Ohio.

For additional data, request item J-103, using Handy Return Card on page 208.

Effective Cloth Guide for Pin and Clip Type Tenters

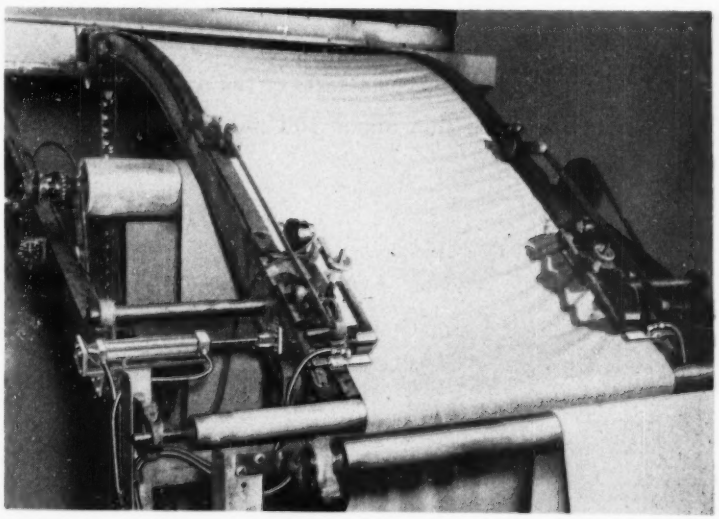
Askania Edge Position Control offers an effective, inexpensive method of guiding cloth into a tenter frame. It automatically positions the guide rails so that the pins or clips accurately engage the selvage. Among its advantages are:

(1) Works with any kind of cloth — now being used successfully with fabrics from light-weight gauze to heaviest woolens;

(2) Non-contact — only a breath of air touches the cloth;

(3) Simple — mill personnel can install it on existing equipment and maintain it;

(4) Accurate — improves cloth



Askania controls automatically position guide rails of this pin tenter so that pins accurately engage fabric selvages.

New Pickers for Old

Your old pickers can be rebuilt exactly like new machines. The basic design of a picker has not changed in more than 50 years, and therefore a thoroughly modern picker can be built right into the old frames at a big saving in cost. The old frames are valuable, and are just as good as new ones.

Where it is not feasible to send your pickers to us for rebuilding, we will exchange them for rebuilt pickers of the same model. Our truck delivers a new picker at your plant and takes away an old one. The new picker can be making laps the day after it is delivered.

Where pickers do not need complete rebuilding, but should have a thorough overhauling, this work can be done right in your picker room with one of our skilled machinery erectors in charge of the work.

We keep a large stock of picker repair parts always on hand, and fill repair orders within 24 hours after their receipt. In an emergency, telephone us in the morning and you can have the picker repair parts at the mill the following day, if you are within about 500 miles of Greenwood.

AldricH MachinE WorkS

Greenwood, South Carolina

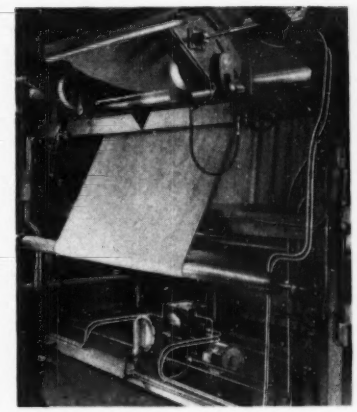
by permitting pinning or clipping closer to the selvage;

(5) Faster tentering — tenter can be operated as fast as desired;

(6) Follows fast runouts, such as bad seams, without overshooting or hunting.

Askania Regulator Co., 240 E. Ontario St., Chicago 11, Ill.

For additional data, request item, J-115, using Handy Return Card on page 208.



The Askania unit regulator can be seen on the floor under this tenter. Since two independent controls are needed, one for each guide rail, two regulators are provided in one housing, with a single oil supply.

Circular Sock Knitter Features Versatility

A new knitting machine called the "Universal Circular Knitter" is 29¾" wide at the base and approximately 42" high. Yarn creel and take-up overhang in the conventional position on top of the machine. The complete machine weighs approximately 1200 lb and permits a 35% to 300% increase in production, depending upon the style of goods being made. Jack cylinders and controls are designed to stand any speed the needle hooks will stand, and the machine is made flexible to make most types of socks.

Advantages are as follows: (1) low maintenance cost, (2) advantages attendant with individual drive, (3) easy to keep clean, (4) little floor space required, (5) wide pattern range (130-step jack), (6) low yarn costs due to automatic shearing, (7) low overall knitting costs, (8) low fixing costs, (9) wide range of cylinder diameters for one machine.

The machine is built in four sections: the bottom section contains the electric drive unit; the second section contains the gearing and reversing clutch mechanism; the third section contains the jack and cylinder and jack selecting mechanism. The top section contains the knitting cylinder, stitch cams, and yarn lever controls.

The machine is constructed on four columns which extend from the floor to a plate which supports the knitting cylinder. Each of the four sections of the machine is divided by plates which provide support for parts. Antifriction bearings are standard equipment throughout, and the first section (motor section) will be standard on all models.

The section containing gearing will be standard, except on machines equipped with automatic oiling systems.

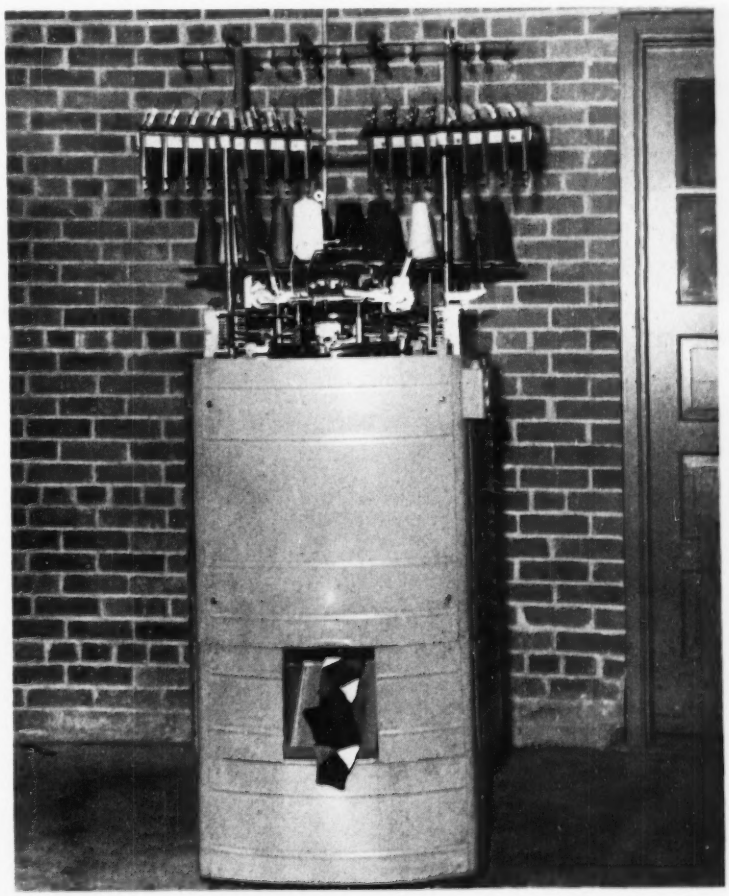
The third section, containing jack cylinder controls, is constructed in units which consist of five sections. The operating mechanism for the selector jacks and selector jack cylinder is in five sections, and the machine may be bought with one to five sections. The jack control mechanism is divided into four sections around the jack cylinder, and a jack control drum and selector can be put into each section.

Available with a minimum of two or maximum of 20 selector mechanisms (jack controls), when the machine is supplied with only two selector plates, only one section of jack cylinder is required as well as one section of the right and left main control drum. With the control levers and control lever blocks in this setup on the jack selection, from one to four knitting stations can be used.

The complete machine with all attachments takes a ¾ hp motor with V-belt drive from a gearhead mo-

(Continued on page 209)

Keller Machine Company's "Universal Circular Knitter."



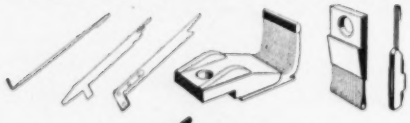
SHOCK RESISTANT . . . Today's high speed knitting machines demand needles conditioned for shock. Textile needles with their special steel formulas, superior tempering and scientific controls — automatic and electronic — assure shock resistance. Results — long needle life with proven production savings.

Add strength and flexibility as two more Textile needle advantages and you see why they are so highly rated in the industry. Try them now for smooth knitting, ultra-fine fabrics and increased profits.

TEXTILE MACHINE WORKS, READING, PENNA.

Textile

SPRING-BEARD NEEDLES



Arrow

LATCH NEEDLES

Public Law 88 of the 83rd Congress, Chapter 164, 1st session, is known as the Flammable Fabrics Act. In the words of the Act itself, it is intended *"To prohibit the introduction or movement in interstate commerce of articles of wearing apparel and fabrics which are so highly flammable as to be dangerous when worn by individuals, and for other purposes."*

The Flammable Fabrics Act

By George S. Buck, Jr.
Technical Director
National Cotton Council of America

EXCLUSIVE

THE ACT has been so drawn that the manufacture and distribution of "normal" textile fabrics are unrestricted; only materials like the long pile rayons which caused a number of deaths several years ago, the highly brushed rayon "torch sweaters," and a few fabrics of cotton, rayon, or other natural or synthetic fibers which have burning characteristics similar to those dangerous types are banned from interstate commerce.

With a little care, the textile industry should be able to "live" with this new federal law without undue hardship.

Fabrics "which are so highly flammable as to be dangerous" are distinguished from others which are normally flammable by means of a testing method developed largely by the industry itself. This method, described in Commercial Standard 191-53, "Flammability of Clothing Textiles," grew out of one developed by the American Association of Textile Chemists and Colorists, now identified as AATCC Standard 33-52, "Flammability of Consumer Textiles." The purpose of the method is to weed out only those fabrics which burn so "rapidly and intensely" that they constitute a potential hazard to life when used for clothing purposes.

Penalties for Violation. Every manufacturer of textiles in the United States should be sure that none of his products is in violation of the Flammable Fabrics Act, since it carries severe penalties for willful violation, with maximum fines of $5,000 and imprisonment up to one year. However, regular testing will be unnecessary for many mills which make no fabrics in the borderline or potentially dangerous classes. A later section of this article deals with types of fabrics most likely to be affected by the Act.

Your Responsibility as a Manufacturer. For some manufacturers, periodic testing may be advisable or necessary to insure that production is not in violation of the Flammable Fabrics Act. The Act also provides that a guaranty of safety, which may be requested by the mills' customers, shall be backed by "reasonable and representative tests." Each manufacturer must therefore decide, upon the basis of his quality controls and the proximity of his fabrics to the borderline, how many tests are an effective assurance that all his production is safe.

Fabrics which fail to meet the requirements of the Act, if intended for clothing use, must be made "safe" by *constructional changes or fire retardant treatment. The only alternative is to withdraw these fabrics from the market.*

Effective Date of Act. The Flammable Fabrics Act takes effect one year after its date of signing. That provision of the Act was designed to give the textile industry sufficient time for any changes necessary to insure compliance with all requirements of the law. *Textile articles are sometimes in the channels of commerce for nearly a year after their manufacture, and since the Act becomes effective July 1, 1954, manufacturers should lose no time in checking their own production.*

Why Supported by Textile Interests. Almost all organized textile groups supported the Flammable Fabrics Act which Congress passed this year. This did not mean that such a law was considered necessary or even desirable, of itself, to protect the public

The author has been actively concerned with problems of flammability and fire resistant finishing since 1935. He is a member of the AATCC Committee on Flammability of Consumer Textiles, the standing and technical committees on Commercial Standard 191-53, the clothing flammability committees of the National Fire Protection Association, and chairman of the American Academy of Pediatrics ASA Committee of Flammability of Children's Clothing. Several of the author's publications on flammability and fire-resistance of textiles are available from the National Cotton Council of America, 1832 M Street, NW, Washington 6, D. C.

REPRINTS. *Additional copies of this article are available without charge as long as the supply lasts. Address request to the Editor, Textile Industries, 806 Peachtree St., N. E., Atlanta 5, Georgia.*

"Safe" Fabrics

Generally all plain surfaced cellulosic and non-cellulosic textiles of print cloth weight or heavier meet the requirements of the Act. Certain other types such as corduroys, velveteens, and terry cloths are also in this category. Here are just a few of the many types of fabric which are judged entirely suitable for clothing use, from the standpoint of flammability:

print cloths	balloon cloth	jeans	crash
broad cloths	oxfords	denims	terry
poplins	sateens	ticking	jacquards
piques	chambray	ginghams	damasks
plisses	gabardines	suede	corduroys
plain cloths	sheetings	whipcord	velveteens
twills	ducks	huck	& plushes

Borderline Fabrics

(Generally "Safe," But Should Be Tested)

cheese cloth
marquisette
lawns
voiles
organdies
tissue ginghams
outing flannel
canton flannel
flannelette
blanket cloth
interlinings
chenilles (tufted fabrics)
crinoline
chiffon voiles

from dangerously flammable fabrics. Most textile interests felt that voluntary methods, particularly with the industry's Commercial Standard 191-53 as an aid, would adequately guard against the manufacture and distribution of any dangerously flammable textiles. However, public reaction to the "torch sweater" incidents, and other sporadic burnings involving textiles, resulted in strong moves at state and municipal levels for legislative restrictions on flammable textiles*

The prospect of attempting to do business under many different state and municipal flammability regulations, some of which apparently would be unreasonable and unworkable, made evident the desirability, and indeed the necessity, of uniform and practical national standards of textile flammability.

The Flammable Fabrics Act passed by the 83rd Congress is believed to be the most reasonable yet effective, solution to this problem which could be reached. Its provisions outlaw for clothing use those types of fabrics which have a history of dangerous burnings, and at the same time place no restrictions on the great majority of textile fabrics which, while flammable, present no unusual or unexpected hazard to consumers. While there is a borderline area in which the imperfections of the testing method and variations in fabric construction will undoubtedly cause difficulty, the classes of fabrics where this trouble can be expected are fairly limited; it is probable that most of these difficulties can be eliminated by further study.

Scope of the Act. *The Flammable Fabrics Act is directed only towards clothing and fabrics intended for clothing use. It has no bearing on household or industrial fabrics.* Furthermore, it recognizes that nearly 90% of textiles are flammable in some degree, and that in clothing and clothing fabrics a distinction must be made between those which are normally flammable and others which burn in a manner likely to cause injury or death. The whole purpose of the Act is to cull those few dangerous fabrics from the great bulk of regular textile production.

A fabric made in the form of a blanket, bedspread, or other household article may be shipped freely in commerce for its intended use, even though its flammability might prevent its use for clothing. *However, the same type of fabric, in a form which might readily be converted for clothing use, should not be shipped in commerce without full notice on each package and on the invoices, to the effect that the material is not suitable for clothing use.*

Examples might be heavily napped flannel yard-goods, lightweight curtain netting, or a special purpose industrial fabric having a long pile. Interlining fabrics, if highly flammable, should also be marked to show the intended use as interlining only.

The Act applies not only to manufacturers, but also to converters, finishers, wholesalers, jobbers, retailers--in fact, to anyone who ships textiles in interstate commerce or offers fabrics so shipped for sale. Obviously it would be impractical for each person who thus handles textiles to make flammability tests for assurance of the fabrics' safety. Therefore the law provides for a guaranty which the manufacturer may furnish his customers, to the effect that reasonable and representative tests show the goods to be not highly flammable. *This guaranty may be passed along by subsequent handlers of the fabric, relieving them from the penalties of the law.*

Administration of the Act. The Flammable Fabrics Act provides for administration and enforcement by the Federal Trade Commission. The Commission is given powers similar to those used in carrying out the Wool Labeling Act. These include the right to develop certain rules and regulations, to cause inspections and tests, to obtain injunctions, and to condemn materials found in violation of the Act. In addition, the unfair trade practice rules of the Commission may be invoked, since

*California has had for several years a flammability law which many regard as unduly restrictive, and in 1953 the legislatures of both New York and New Jersey approved textile flammability bills. (These states held off final approval of their bills pending action on the federal law.) Other states and cities promised to follow suit, in many cases with acts which incorporated arbitrary or impractical standards of flammability.

These Fabric Types May Be "Highly Flammable"

(Under the Terms of the Flammable Fabrics Act)

A. Some very sheer fabrics, whether made of a cellulosic fiber or one of the non-cellulosic synthetics.

B. Certain fine nets, whether made of a cellulosic fiber or one of the non-cellulosic synthetics.

C. Brushed or napped fabrics, usually cellulosic, but also including non-cellulosic synthetics, where the nap is long or irregular. A light or loose construction of the base fabric increases the flammability of these fabrics.

D. Pile fabrics, particularly of cellulosic fibers, but also of non-cellulosic synthetics. A long or irregular pile may be dangerous.

E. Tufted fabrics (chenilles) where the tufting is long, loose, or irregular. Flammability is increased by a loose or sleazy base fabric.

F. Borderline fabrics, after the application of certain finishes.

a violation of the Act also constitutes an unfair and deceptive act or practice as defined in the Federal Trade Commission Act.

Exactly how the Commission will move in developing its rules and regulations is not yet known; FTC officials have indicated that their wish is to interfere as little as possible with normal textile operations, and to step in only when there is evidence of a violation of the Act. *However, there are many aspects of the new law, both legal and technical, which are not yet entirely clear.* Undoubtedly the Commission will attempt to clarify these points, probably in consultation with industry representatives, during the first six months of 1954.

Why Some Fabrics Are Dangerous. Ease of ignition, speed of burning, the intensity of the spreading flame, and the design of the garment are the chief factors which contribute to possible flammability hazard in clothing. Recognizing that garment design is still too complicated a subject for practical regulation, the testing method of the Act measures only the first three factors to rate fabrics safe or highly flammable. A brief explanation of how textiles burn may make these criteria of flammability more understandable.

When plain surfaced fabrics burn (those without nap, pile, tufting, or other raised fiber surface), the entire structure is consumed as the flaming progresses. Lighter weight and more open fabrics of this type ignite more easily and burn more rapidly than those which are heavier and more closely woven because more oxygen can reach the fibers. The burning rate of these fabrics is highly dependent on the position of the cloth; the speed varies from a maximum when the flame travels vertically upward, to a minimum when traveling vertically downward. Flamespeed also accelerates when long lengths of a fabric burn upward, and volume and intensity of flame increase.

Since the whole structure of these plain surfaced fabrics burns, heat and flame will be transferred to the garment wearer. It is obvious that the greatest hazard will be encountered when these lightweight, open fabrics are used in long lengths, such as in women's skirts, or evening dresses.

The burning of textiles with a raised fiber surface, such as flannels, brushed rayons, chenilles, and pile fabrics, is somewhat more complicated. The raised surface fibers ignite readily, as a rule, and the flame usually travels rapidly across the fabric face. This surface flash is often largely independent of the cloth position, so that it may proceed upwards, horizontally, or downwards at very nearly the same speed. However, frequently the volume of flame is small, insufficient in fact to cause the base fabric to ignite or fuse.

In such cases the heat which could pass through the garment to the wearer would not be sufficient to cause serious injury, and the fabric could not be considered dangerously flammable. When, on the other hand, the nap, pile, or tufting burns with enough intensity to ignite the entire structure, the combination of easy ignition, rapid flame spread, and intense burning throws the fabric into the highly flammable classification.

Commercial Standard 191-53 separates plain surfaced fabrics from those with a nap, pile, or tufting in setting up three classes of flammability. Both types must burn the five-inch test distance in less than four seconds, but the fabrics with the raised fiber surface must also show base fabric ignition to be placed in the restricted category, Class III.

Reproducibility of test results, from sample to sample and from laboratory to laboratory, is lower with napped, pile, and tufted fabrics than with plain surfaced types. Constructional irregularities and unavoidable differences in brushing and sample preparation cause much of the inconsistency in testing these materials. To provide manufacturers with a margin of safety, an intermediate class or twilight zone has been established for those fabrics. Although the Flammable Fabrics Act does not apply to this zone (Class II of the Commercial Standard), mills are urged to avoid the production of any cloth that close to the borderline.

What Fabrics Are Affected. In general, fabrics which, under the Act, *are not suitable for wearing*

apparel are very sheer types, usually but not always of a cellulose base, certain nets, and some types of cloth which have raised fiber surfaces. This latter class would include long pile rayons, some highly brushed rayons and cottons, and certain long, loose, or shaggy chenilles (tufted fabrics).

The cellulose base fabrics (rayon, cotton, linen) are usually more flammable than the animal fibers and the newer man-made fibers. However, in certain combinations of construction and finish, acetate, nylon, Orlon, Dacron, and other synthetic fibers will fail to meet the requirements of the Flammable Fabrics Act.

During the development of the testing method many hundreds of different natural and synthetic fiber fabrics were studied. *It is safe to say that no plain surfaced fabric as heavy or heavier than a print cloth is unsafe, unless a special finish has been applied which markedly increases its normal flammability.* As a matter of fact, no untreated cottons, among the sheers and nets, were found to fail the test, although voiles and organdies in some cases were close to the borderline. Stiffening finishes can increase the speed of burning of these lightweight materials; it is recommended that manufacturers of such fabrics periodically check the burning characteristics of their products.

In general, most rayon sheers meet the requirements of the Act, but here again the very lightweight types come close to the borderline, and should be tested, particularly when finishes have been applied. Some nets and laces of nylon and silk have been found to fail, and in certain constructions Orlon is quite flammable and could not be considered suitable for clothing use.

Raised Fiber Fabrics. The intent of the Act, as noted, is to place no restriction on flannels, flannelettes, and lightly brushed rayons, where the construction is not too sleazy, too shaggy, or the nap too long. Such fabrics, when ignited in the testing machine, will generally exhibit a rapid surface flash which has neither sufficient volume nor intensity to ignite the base fabric itself. However, when the raised fibers are long or shaggy, and when the base fabric is loose and somewhat open, the surface flaming may set fire the whole structure of the fabric, which would then fall into Class III: highly flammable.

Manufacturers of napped and brushed fabrics, whether of cotton, rayon, or synthetic fibers, should carefully test all production. Manufacturers of pile fabrics should be especially cautious with any goods intended for clothing use, with the exception of interlinings. Pile fabrics can be among the most dangerous types, particularly when a long rayon pile is employed. These fabrics should either be eliminated from clothing use or made durably fire resistant by the application of a suitable finish.

Chenilles, or tufted fabrics, can burn rapidly and intensely if the construction is loose, or if the tufting is long and shaggy. However, there is a wide range of tufted constructions which easily meet the requirements of the Act, and it should be possible for the manufacturers of tufted robes, the principal item of clothing in which these fabrics are used, to meet the requirements of the Act without resorting to fire resistant treatments.

Dangerous Finishes. The application of certain finishes can render almost any type of fabric dangerous. Nitrocellulose is the outstanding example of a treatment which markedly increases textile flammability. *To be on the safe side, no fabric intended for clothing use should ever be given a nitrocellulosic finish. Other finishes should be checked to determine their influence on fabric flammability,* although usually they will not cause much concern unless the fabric is already close to the borderline.

Fabric Flammability May Be Lowered. Many highly flammable textiles can be modified, simply by changes in construction, to meet the requirements of the Flammable Fabrics Act. The modified fabric won't be quite the same as the original, but may still serve its purpose better than one with a fire retardant finish. Modifications in construction are also the least expensive ways of decreasing fabric flammability.

There are several ways to change construction for lower flammability. Very light sheers and nets can be made somewhat heavier, or the weave made more compact. Higher yarn twist sometimes decreases burning speed. These changes are all in the direction of decreasing the oxygen available to each fiber during burning.

Application of the same principles can make fabrics with raised fiber surfaces (napped, brushed, pile, tufted) burn more slowly. Generally a dense, even fiber surface burns less readily than one which is loose and uneven, to which oxygen has easier access. A short pile or nap usually burns more slowly than a long one. (Short flannelettes which sometimes exhibit very rapid surface flashing are exceptions to this rule. However, flame intensity is almost negligible with such short naps, and when the base fabric doesn't ignite, the surface flash can be disregarded.)

The changes to be made in a fabric with a raised fiber surface are therefore in the direction of a more dense or compact nap, pile, or tufting, a more even fiber surface, and shorter fibers on the surface. The basic structure also influences flammability of these fabrics. Tightening-up on the weave will permit less air to pass through the back of the fabric, and will not only make surface ignition and burning more difficult, but will tend to prevent ignition of the base fabric itself.

Sometimes constructional modifications too radically alter the nature of the fabric. In such cases, a moderate percentage of a flame resistant fiber may be blended with the more combustible fiber, so that burning speed is reduced sufficiently to meet the requirements of the Act. Dynel is a fiber especially suited for this purpose, but acetate will frequently serve nearly as well, and at considerably lower cost.

The burning characteristics of a number of fabric types can be modified by finishing agents. Sometimes these increase flam-

The Flammable Fabrics Act in Summary

Section 2 Contains definitions; Act applies to wearing apparel and fabric intended for wearing apparel, with certain exceptions for interlinings, and hats, gloves, and footwear.

Section 3 Lists prohibited transactions, which include manufacture, sale, transportation in commerce, etc., of highly flammable textiles or garments.

Section 4 Defines highly flammable fabrics by reference to Commercial Standard 191-53 for textiles and 192-53 for plastics and coated fabrics.

Section 5 Outlines administration and enforcement by the Federal Trade Commission, including authorizations for inspections of tests where necessary.

Section 6 Contains injunction and condemnation proceedings applicable to violations of the Act.

Section 7 Lists maximum penalties of $5,000 fine and one year imprisonment for willful violation of Act, or for giving false guaranty (Section 8).

Section 8 Provides for guaranty by manufacturer to effect that reasonable tests have been made to show goods safe. This provision relieves purchaser (such as retailer) from making tests.

Section 9 Covers goods imported from foreign countries.

Section 11 Excludes common carriers, finishers, and goods shipped for finishing.

Section 12 Says Act shall be effective July 1, 1954.

Manufacturers may obtain copies of the Flammable Fabrics Act from the National Cotton Council, 1832 M Street, N.W., Washington 6, D. C.

mability, but in other instances they tend to slow burning rate. The effect of such finishes as stiffeners and softeners will be most noticeable with sheer and net fabrics. Trial may show whether these finishes will sufficiently reduce the flammability of a particular fabric. They must be durable enough, of course, to meet the laundering and dry-cleaning provisions of CS 191-53.

Use of Fire Retardants. *When changes in construction are not desirable or practical, the use of a durable fire retardant finish will enable many fabrics to meet the requirements of the Flammable Fabrics Act.* During recent years fire retardants for textile use have improved somewhat in quality, so that today one or another of the commercially available types can almost always be adapted to the expected use conditions.

These finishes are not entirely satisfactory for clothing fabrics because of their effects on physical properties, dyes, absorbency, and weight, and because of their cost. However, they are being still further improved and, together with new finishes promised from current research studies, should bring flameproofing into much more common use.

At this time, the resin phosphate treatments available from several of the larger chemical manufacturers are among the more practical types of fire retardant finishes commercially available. Their fastness characteristics meet the exposure conditions which fabrics restricted by the Act might be expected to undergo.

A durable finish based on a titanium-antimony complex is also available and will probably serve most applications quite satisfactorily. However, it requires specialized finishing equipment and may be difficult to apply to very sheer or lightweight goods.

One of the most promising finishes is the THPC treatment which has been developed by the Southern Regional Research Laboratory of the USDA. This finish should be commercially available before the Flammable Fabrics Act takes effect next July 1. Manufacturers who have a flameproofing problem may find its solution in the THPC treatment.

Outlook for the Future. The Flammable Fabrics Act is far from perfect, from both the legal and technical viewpoints. Its basis on a testing method known to be inexact will certainly present novel legislative and administrative problems. While some of the bugs in the law can be anticipated now, more are certain to arise after next July 1st. Patience and cooperation on the part of both the industry and the Federal Trade Commission will be required to make even this best possible solution of the flammability problem work successfully.

The interpretation of testing results in the use of CS 191-53 is known to be confusing for some types of fabrics. The fabric sample holder, the method of measuring flame intensity, and the brushing procedures incorporated in the test are also inadequate. Committees of the AATCC have taken up some of those problems, and as the method is improved, Congress may be asked to revise the Act from time to time. The present Act may therefore be only the start toward a more effective and workable flammability law.

A long-term trend toward stricter fire regulations can be seen in the municipal and state regulations which broaden and tighten each year. In more than half of our states and many of our larger cities ordinances and acts already have placed restrictions on combustible textiles for certain uses, mainly in hotels, restaurants, and other places of public assembly.

There is little prospect of anything but an extension of these regulations over the years, and moves to broaden federal legislation must also be expected.

Textile manufacturers must be prepared to resist the imposition of impractical and unnecessary restrictions on textiles, but at the

same time gear their thinking and planning to inevitable (and justifiable) movements toward greater fire-safety.

Commercial Standard 191-53 in Summary

Scope

The standard provides methods of testing the flammability of clothing and textiles intended to be used for clothing*; establishes three classes of flammability; sets forth the requirements which textiles shall meet to be so classified; and warns against the use of those textiles which have burning characteristics unsuitable for clothing.

Requirements

Class 1. *Normal Flammability.* This class shall include textiles which are generally accepted by the trade as having no unusual burning characteristics.

A. *Textiles without nap, pile, tufting, flock, or other type of raised fiber surface.* Such textiles in their original state and/or after being dry cleaned and washed shall be classified as Class 1, normal flammability, when the time of flame spread is 4 seconds or more.

B. *Napped, pile, tufted, flocked or other textiles having a raised fiber surface.* Such textiles in their original state and/or after being dry cleaned and washed shall be classified as Class 1, normal flammability, when the time of flame spread is more than 7 seconds, or when they burn with a rapid surface flash (from 0 to 7 seconds) provided the intensity of the flame is so low as not to ignite or fuse the base fabric.

Class 2. *Intermediate Flammability.* This class shall include textiles which are recognized by the trade as having flammability characteristics between normal and rapid or intense burning.

A. *Napped, pile, tufted, flocked, or other textiles having a raised fiber surface.* Such textiles in their original state and/or after being dry cleaned and washed, shall be classified as Class 2, intermediate flammability, when the time of flame spread is from 4 to 7 seconds, both inclusive, and the base fabric ignites or fuses.

Class 3. *Rapid and Intense Burning*[1]. This class shall include textiles which have burning characteristics as described below. Such textiles are considered dangerously flammable and recognized by the trade as being unsuitable for clothing because of their rapid and intense burning.

A. *Textiles free from nap, pile, tufting, flock, or other type of raised fiber surface.* Such textiles in their original state and/or after being dry cleaned and washed shall be classified as Class 3, rapid and intense burning, when the time of flame spread is less than 4 seconds.

B. *Napped, pile, tufted, flocked, or other textiles having a raised fiber surface.* Such textiles in their original state and/or after being dry cleaned and washed shall be classified as Class 3, rapid and intense burning, when the time of flame spread is less than 4 seconds and when the intensity of flame is such as to ignite or fuse the base fabric.

Methods of Test

Test Specimens

Number and size of specimens required. Five specimens, each measuring 2 inches by 6 inches, are required for each test.

For textiles *without* a raised fiber surface the long dimension shall be that in which they burn most rapidly and the more rapidly burning surface shall be tested. To establish the long dimension and the surface, preliminary tests are made with specimens cut in different directions.

For textiles *having* a raised fiber surface, the direction of the lay of the surface fibers shall be parallel with the long dimension of the specimens. For this type of textiles with varying depths of pile, tufting, etc., the specimens are taken from that part and tested on that surface which has the fastest rate of burning.

If the specimens in the preliminary test do not ignite or are very slow burning, or could have a fire retarding finish, a swatch large enough to provide the specimens required for the test, with allowance for shrinkage in dry cleaning and washing, is subjected to the dry cleaning and washing procedure described below. The specimens for the flammability test are then taken from it.

The specimens required for testing each 2 x 6 inches, are marked out on the back (or under side) of each sample with the long dimension in the direction in which burning is most rapid, as established in the preliminary trials. The end of the specimen toward which and on the face of which burning is most rapid is identified by attaching a staple to it. The specimens are then cut out.

Sample Preparation

Dry Cleaning. A swatch from each sample, as mentioned, shall be subjected to the following dry cleaning procedure.

Apparatus. The apparatus is a cylinder, preferably metal, approximately 13 inches high and about 8¾ inches in diameter (capacity 3 gallons). The cylinder is mounted in a vertical position on an axis which is inclined 50° to the axis of the cylinder and is rotated about this axis at a speed of 45 to 50 revolutions per minute.

Cleaning procedure. The apparatus is filled approximately one-third with perchlorethylene to which is added 270 ml of dry cleaning soap[2]. The swatches and sufficient suitable worsted cloth[3] in pieces approximately 12 x 12 inches to make a total dry load of 1 pound are placed in the apparatus. It is operated for 25 minutes. The solution is poured out, the apparatus refilled to approximately one-third with fresh perchlorethylene without soap, the apparatus is operated for an additional 5 minutes. This last operation is repeated 3 times. The swatches are then removed and the excess solvent removed from the swatches by any convenient means, such as rolling them between two layers of turkish toweling or between two layers of absorbent paper. They are then permitted to dry at room temperature.

Washing procedure. The swatches, after being subjected to the dry cleaning procedure shall then be immersed and worked gently for 5 minutes in a bath of soft water in which 0.5 per cent neutral chip soap has been dissolved. The volume of the bath shall be 30 times the weight

*Hereinafter "clothing and textiles to be used for clothing" shall be referred to as "textiles."

[1]Fabrics prohibited from clothing use by the Flammable Fabrics Act are described as those which burn rapidly and intensely. They fall into this Class 3.

[2]The soap shall be made by dissolving 56 g of caustic potash (KOH) in 100 ml of water. The potassium hydroxide solution shall be poured slowly with constant stirring into a mixture of 340 g of oleic acid, 400 ml of Stoddard Solvent (Commercial) (Standard CS3-40 grade), and 100 ml of tertiary butyl alcohol or an equal quantity of butyl cellosolve.

[3]Worsted cloth of plain weave, 8 to 8.5 ounces per linear yard, 58 inches wide, is suitable for this purpose, and may be obtained from the Arlington Mills, Lawrence, Mass.

[4]This apparatus is manufactured by the United States Testing Company, 1415 Park Avenue, Hoboken, New Jersey.

of the swatches and the temperature shall be between 95 and 100 F. The swatches shall then be rinsed twice in water at 80 F, extracted and dried. The individual specimens, each 2 x 6 inches, are then cut out as described.

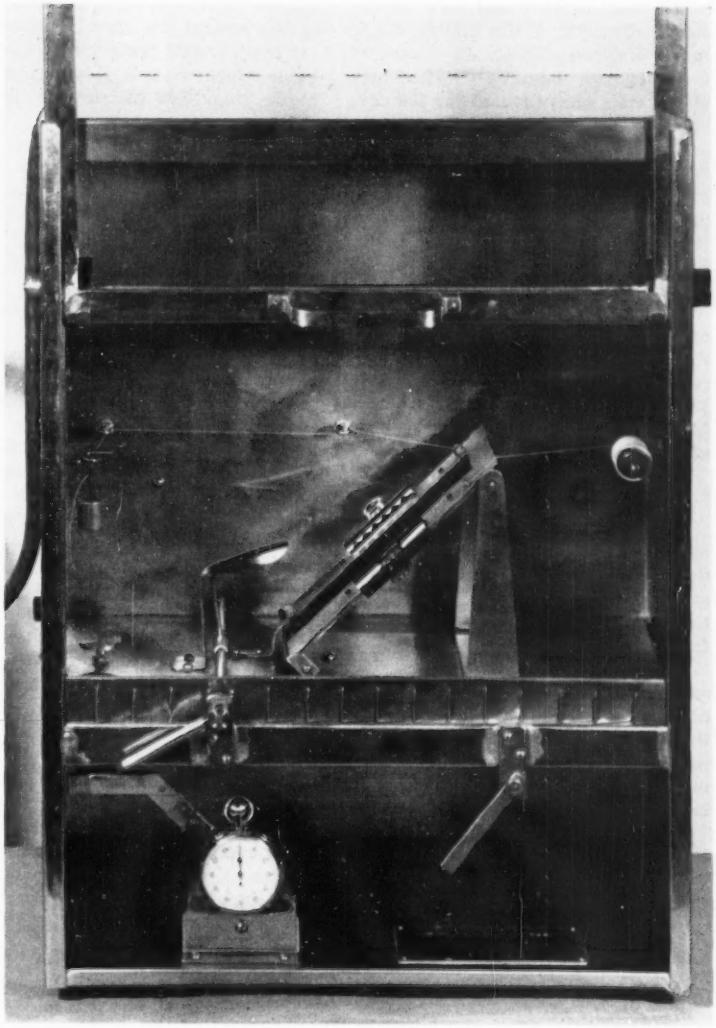
Brushing and drying specimens. Each specimen having a raised fiber surface, in its original condition or after dry cleaning and washing, is placed on the brushing device carriage and drawn under the brush once against the lay of the raised fiber surface. Other specimens do not require brushing. All specimens are clamped individually in the specimen holders of the flammability tester, with the staple on top and the stapled end at the closed end of the holder. They are then dried in a horizontal position in an oven for 30 minutes at 221 F (105 C), removed from the oven and placed over anhydrous calcium chloride in a desiccator until cool, but for not less than 15 minutes.

Description of Apparatus

The AATCC Flammability Tester[1] consists of a draft-proof, ventilated chamber enclosing a standardized ignition medium, sample rack, and automatic timing devices. The chamber is 14½ in. wide by 3½ in. deep and 14 in. in height. There are 12 half-inch holes equidistant along the rear of the top closure. A ventilating strip is provided at the base of the sliding glass door in the front of the apparatus.

The ignition medium consists of a spring-motor driven gas jet formed around a #26 hypodermic needle. A trigger located in the front of the apparatus serves to wind the spring-motor when the machine is placed in operation. The fuel supply used with the Flammability Tester is cp Butane which is controlled with a needle valve and manometer to yield an ⅝ in. luminous flame when the apparatus is at rest. The flame is brought forward in an arc to impinge on the sample with the gas jet perpendicular to the sample face. The tip of the jet approaches to within 5/16 in. of the face of the sample, projecting the flame into the fabric for 5/16 of an inch. Flame impingement on the sample is timed for one second.

A sample rack provides support for the frames in which the samples are mounted. The angle of inclination is 45 degrees. Two guide pins, projecting downward from the center of the base of the rack, travel in slots provided in the floor of the chamber so that adjustment can be made for the thickness of the sample in relation to the flame front. A stop is provided on the base of the chamber to assist in adjusting the position of the rack.



THE AATCC FLAMMABILITY TESTER. Sliding glass door is in raised position to better show components, so all of it cannot be seen in this photo. Rubber tube running down the left side of the instrument case leads to the fuel supply tank (not shown).

The sample frames consist of matched pair of 1/16 in. plates, slotted and loosely pinned for alignment. The plates are held together on the face and back of the sample, by means of removable clamps, and expose a test strip 1½ in. wide by 6 in. long. One frame is provided for each sample in a set of five. Timing arrangements on the Flammability Tester are fully automatic. A link between the driving mechanism of the gas jet and the stop-watch control puts the watch in operation when the ignition flame reaches its most forward position in relation to the test specimen. A stop cord, laced across the top of the test specimen, when cut by the flame front on the burning test specimen drops a weight on a stop motion and shuts the timing off. Suitable thread guides are provided on the sample frames and chamber walls to permit lacing of the stop cord in the proper position, exactly 5 in. from the point where the center of the ignition flame impinges on the test specimen. The stop cord consists of a No. 50 mercerized cotton sewing thread.

The AATCC Brushing Device[4] is used for preparation of napped pile or tufted test specimens and consists of a suitable carriage and clamp for the sample frame and a weighted nylon bristle brush mounted perpendicular to the sample face. The carriage is a four-wheeled device

which travels back and forth in the length direction of the sample frame for a distance slightly in excess of the exposed length of specimen. Guide rails are provided for the carriage wheels.

The brush consists of two rows of 0.016 in. diameter nylon bristles, with 20 bristles per tuft, and 4 tufts per inch. The two rows of bristles are staggered. The tufts are cut to a uniform 0.75 in. length.

The brush is supported by a framework structure which exerts a downward pressure of 150 grams on the sample. Provision is made on the carriage bed to compensate for the 1/16 in. thickness of the bottom frame in order to eliminate sagging of the specimen in the frame.

Procedure for Testing Flammability

Adjust the position of the rack of the flammability tester with a holder and specimen in position, so that the tip of the indicator finger touches the face of the sample.

Open the control valve in the fuel supply. Allow approximately 5 minutes for the air to be drawn from the fuel line, ignite the gas and adjust the flame to a length of ⅝-inch measured from its tip to the opening in the gas nozzle.

See that the stop cord (No. 50 cotton sewing thread) is strung through the guides in the upper plate of the specimen holder across the top of the specimen and through the guides at the rear of the chamber over the guide ring, and weight is hooked in place close to and just below the guide ring. Set the stop watch at zero.

Remove the mounted specimen from the desiccator and place it in position on the rack in the chamber of the apparatus. Close the door of the apparatus. Conduct the test in a draft-free room with the apparatus at room temperature.

Bring the starting lever over to the extreme right and release it. This starts the timing mechanism and applies the flame to the specimen for a period of 1 second. This should be done within 45 seconds of the time the specimen was removed from the desiccator. Timing is automatic, starting upon application of the flame and ending when the weight is released by the burning of the stop cord.

Record the time of flame (reading of stop watch) of each specimen and note whether the base of each specimen having a raised fiber surface is ignited or fused to a point where the damage is apparent from the bottom of the sample.

Results

Time of flame spread. The time of flame spread of the textile is taken as an average time for 5 specimens. Results of tests of specimens before and after dry cleaning and washing shall be recorded and reported separately. If the time of flame spread is less than 4 seconds or if the specimens do not burn, test 5 additional specimens. The time of flame spread is then taken to be the average time for the 10 specimens or as many of them as burn.

Base fabric ignition or fusing. Base fabric ignition or fusing of textiles having raised fiber surfaces shall be reported when the base fabric of more than 1 of the 5 (or 2 of the 10) specimens tested ignite or fuse.

Reporting results. The reported result shall be the flammability before or after dry cleaning and washing, whichever is lower, and, based on this result, the textile shall be placed in the proper classification.

NOTES

The methods of test and classifications outlined herein agree with all essential requirements of the Standard Test Method for Flammability of Consumer Textiles of the American Association of Textile Chemists and Colorists.

REFERENCES

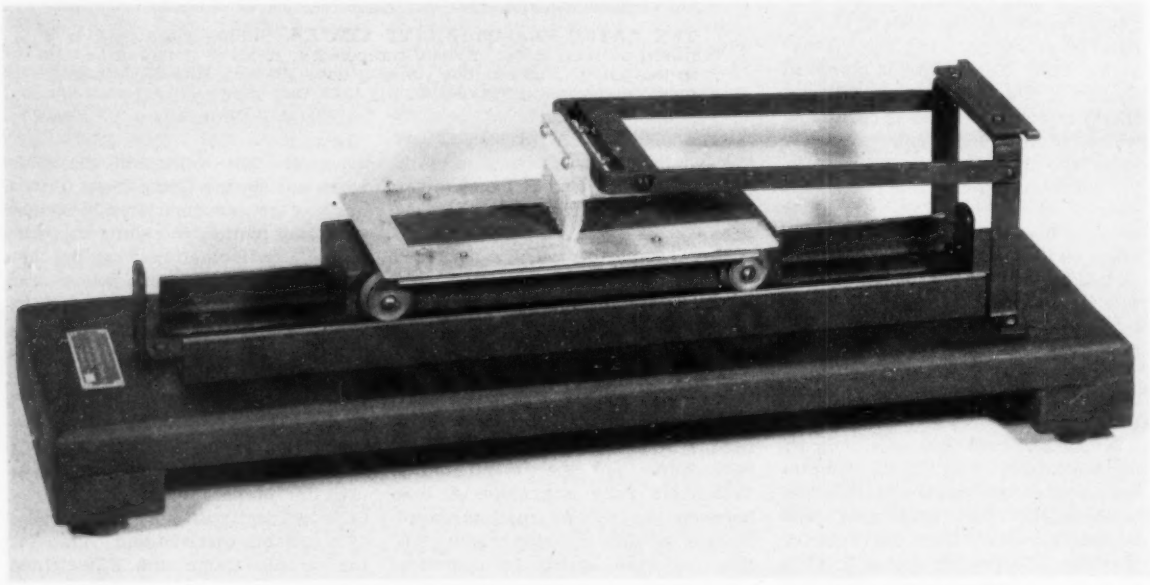
Statutory Requirements For Flame Resistance in Textiles
Buck, Ind. & Eng. Chem., 42, 428 (1950)

Flammability of Consumer Textiles
Buck, Amer. Dyestuff Reptr., 38, 78-84 (1949)

Fire-Resistant Textiles
Buck, Encyclopedia of Chemical Technology, Vol. 6

Hearings Before the Committee on Interstate & Foreign Commerce
House of Representatives, 83rd Congress (Flammable Fabrics Act)

THE AATCC BRUSHING DEVICE for preparation of napped pile or tufted specimens for flammability testing.



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Cotton Fibers

Cyanoethylated Cotton Fibers (3.8% N)

Cross sectional appearance of cyanoethylated cotton fibers as compared with cotton fibers taken from the same fiber blend. Note that the cyanoethylated cotton fibers are larger in diameter than the cotton (**Fig. 3**, see text). Magnification is approximately 800x.

New Textile Fibers Created

by reaction of cotton with acrylonitrile

RESEARCH at the Institute of Textile Technology during the past three and one-half years has resulted in the development of a new series of textile fibers.*

The process involved, called cyanoethylation (sigh' ann o ethel a shun), was first applied to cellulosic fibers by French workers in 1936[6]. Subsequently, considerable work was done in the United States and in England along related lines by several industrial research laboratories which has been adequately summarized by Bruson and by MacGregor[3, 7].

The production of the principal chemical used in the process, acrylonitrile, has recently become sufficiently great to lower the cost [9] to a point so that the process as developed by the Institute appears to be economically feasible.

Acrylonitrile reacts with viscose rayon, starch, paper and polyhydroxy gums and resins to give interesting products which have yet to be fully investigated[5, 6, 7]. It is widely used in the production of many synthetic rubbers, soil conditioners, and acrylic textile fibers, such as Orlon, Dynel, Acrilan, and X-51.

Characteristics of New Fibers. The partially cyanoethylated cotton fibers are similar in appearance, hand, and processing characteristics to cotton, but differ primarily and significantly[4] in that they are:

(1) Permanently resistant to microorganism attack, such as mildew and bacteria; (2) more resistant to wet and dry heat degradation; (3) more receptive to all classes of dyes, including acid dyes; and (4) more resistant to abrasion.

This new series of fibers may also serve as a base material that can be changed by subsequent treatments to give textile products having even more desirable qualities.

Treatment of Cotton Fibers, Yarns, and Fabrics with Acrylonitrile. The most convenient commercial processing equipment for treating cotton yarns and bulk fibers with acrylonitrile is the package dyeing machine. In preliminary investigations, a Gaston County single-package dye machine was used successfully. In later work, a two-kier, 50-package Gaston County dye machine was used. The procedure used in each case was basically the same, but slight modification was necessary in going from the small unit to the larger unit due to differences in heat capacities of the systems.

Treatment of Yarn in One-Pound Package Machine. The procedure used with the one-pound package unit was as follows: A one-pound package of 40s/2 combed yarn wound in the customary manner for dyeing was placed in a Gaston County dye machine. The machine was then charged with a dilute sodium hydroxide solution containing a wetting agent.

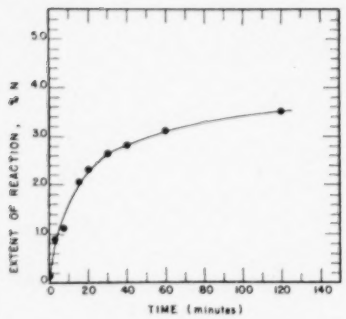
The caustic solution was circulated through the package from inside out, and then the direction of the flow was reversed to outside in. The reversal of the flow through the package was effected by manual operation in two-minute cycles. After allowing the caustic to circulate in this manner through the package for twenty minutes at room temperature, it was drained off and the yarn package removed. The package was then centrifuged to reduce the dilute caustic pickup of the yarn to approximately 100% and then replaced in the dyeing machine.

The machine was charged with acrylonitrile and the expansion tank cut out of the circulating system by closing the expansion tank return and cut-off valves. The acrylonitrile was then circulated through the yarn package using the same time cycles as for the caustic while the reaction temperature was rapidly raised to the desired temperature by introducing steam into the dye pot steam jacket. The pressure developed in the kier as a result of thermal expansion of the acrylonitrile was relieved by opening the expansion tank return valves momentarily.

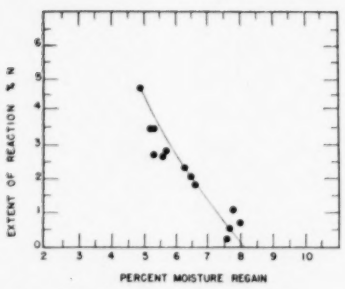
The reaction temperature was maintained at 135 F for one hour, after which the acrylonitrile was drained off and the yarn washed with

*This new series of fibers, produced by the treatment of cotton with acrylonitrile, was temporarily designated T-7; a permanent name will later be assigned.

By Jack Compton, W. H. Martin, B. H. Ward, Jr., and D. D. Thompson
Institute of Textile Technology, Charlottesville, Virginia



(Fig. 1) RATE OF REACTION of acrylonitrile with cotton at 55 degrees C (129 F).



(Fig. 2) EQUILIBRIUM MOISTURE REGAIN of cyanoethylated cotton fibers at various nitrogen contents conditioned at 72 degrees F and 59% RH.

cold water. A wash consisting of sufficient dilute acid to neutralize the remaining sodium hydroxide was then introduced, after which the package was washed free of acid in the machine. The yarn package was removed from the machine and allowed to dry in warm air. An analysis of the dry yarn showed that it contained 3.8% nitrogen.

Yarns Treated in 50-Package Machine. In runs made in the 50-package Gaston County dye machine, automatic controls were used, and the outside in-inside out circulation cycles were five and three minutes, respectively. The dilute caustic pick-up in the case of both 60s/2 and 80s/2 cotton yarns wound on springs after centrifuging was 87%. The amount of acrylonitrile used in this machine was approximately fifty gallons. The procedure used with the 50-package machine was otherwise the same as that employed in the case of the single package dyeing machine.

Bulk Fibers and Fabric. It has been found that cotton fibers in bulk form may be successfully treated in a Gaston County dye machine using the bulk fiber adapter. Full width fabric, after proper folding, can be wrapped around the spindle of the dye machine and cyanoethylated successfully using essentially the same procedures described. In all cases, uniform products were obtained by this method.

Another method which has been successfully used for the treatment of fabric on a continuous basis involves padding on of dilute caustic followed by immersion of the fabric in several tanks of acrylonitrile equipped with squeeze rolls. When the temperature of the acrylonitrile is held at near the boiling point, 71-72 C, two to three per cent nitrogen can be fixed to the cotton in a contact time of two to three minutes.

Following the acrylonitrile treatment, the fabric was passed into a cold water wash and then into an acetic acid sour followed by additional cold water washes. This procedure can doubtlessly be adapted to commercial production when a completely enclosed unit has been developed.

The vapor phase reaction of caustic pretreated cotton fabric with acrylonitrile has also been shown to be feasible, but a completely satisfactory production unit has not been developed.

Rate of Reaction of Caustic Pretreated Cotton Fibers with Acrylonitrile to Form New Fiber Products. The extent of reaction of cotton fibers in bulk, yarn, or fabric form is conditioned by the thoroughness of the pretreatment and the concentration of the sodium hydroxide solution, the temperature of the acrylonitrile, and the time of contact with acrylonitrile. The rate of the reaction of acrylonitrile with caustic presteeped cotton fibers in the form of roving at 55 C is shown in Figure 1.

It will be noted that the reaction is initially quite fast, after which it slows down rapidly. The control of the nitrogen content is relatively easy in the range of 3% to 4%, which, in general, makes the most desirable product.

Effect of the Extent of Reaction of Acrylonitrile with Cotton on the Moisture Regain of the New Fibers. The introduction of the first cyanoethyl groups into the cotton causes a slight increase in moisture regain, after which a progressive decrease occurs. In the most useful range of 3% to 4% nitrogen, the moisture regain of the new fibers is 2% lower than that of untreated cotton. This relationship is shown in Figure 2.

Strength and Elongation Properties of the New Fiber Products. In general, the tensile strength of partially cyanoethylated fibers with a nitrogen content of 5%, or less, is the same as that of the original cotton, as determined from single fiber strength measurements. This is also true of the elongation. However, when the Pressley fiber bundle strength was determined, a strength increase was found. When calculated on the basis of grams per denier, no change in strength was found. Thus the strength increase found in this case was proportional to the weight increase due to reaction. When the extent of reaction exceeded a nitrogen content of about 5%, a progressive decrease in Pressley tensile strength occurred.

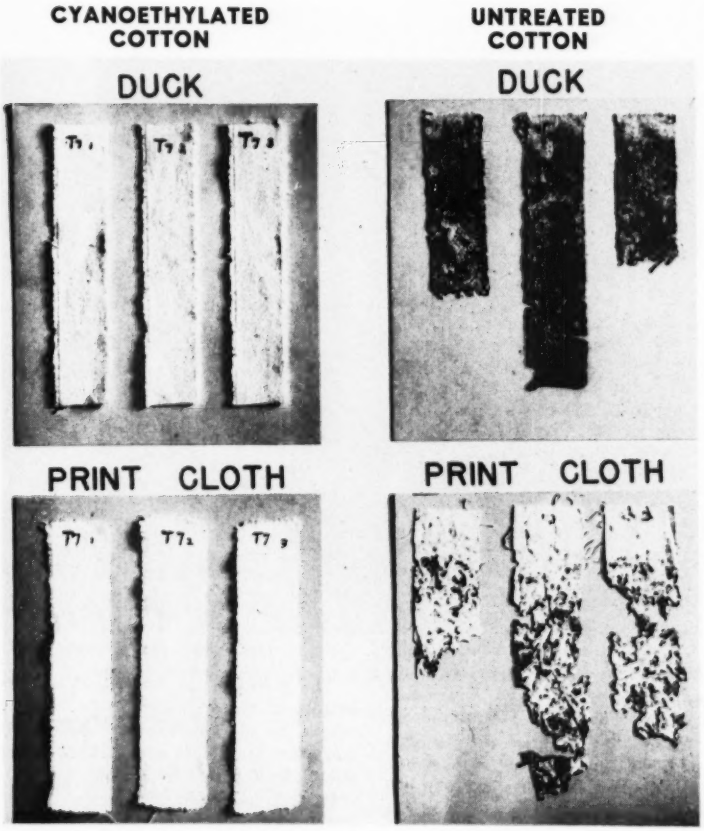
On the other hand, cyanoethylated cotton yarns, prepared in the package dye machine, were found to have greater strength and elongation than cotton yarns of the same count. The increase in strength was in this case decidedly greater than the weight increase. This effect on two different yarn counts is shown in Table I.

It will be noted that the strength increase of yarns is quite variable and has no direct relation to the extent of reaction. The conditions under which the reaction occurs seem to be related to the strength increases realized. This variable is being further investigated.

The breaking strength of cyanoethylated cotton fabric is usually about the same as that of cotton fabric of comparable weight and construction.

TABLE I. The Single End Strength and Elongation of Partially Cyanoethylated Combed Cotton Yarns

Yarn Count		% Nitrogen	Breaking Strength		Increase in Breaking	Elongation, %
Designated	Actual	Content	Grams	Grams/Denier	Strength, %	
40/2	30/2	0	558	1.81	——	4.5
40/2	34.5/2	3.8	736	2.72	+50	6.5
60/2	59/2	0	318	1.76	——	5.0
60/2	55/2	3.4	410	2.15	+16	5.5



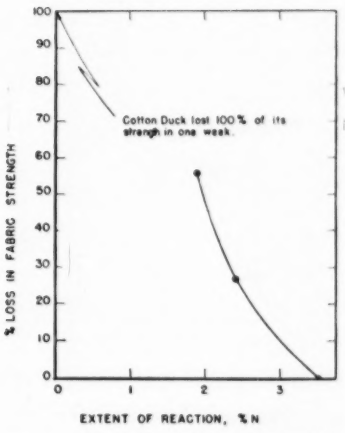
(Fig. 4) 14-DAY SOIL BURIAL TEST. A comparison of the appearance of cyanoethylated cotton and cotton fabrics after burial in soil at 30 degrees C and 95% relative humidity for two weeks.

Comparison of Partially Cyanoethylated and Native Cotton Fiber Cross Sections. Microscopic examination of fiber cross sections of the partially cyanoethylated and native cotton shows that the cell wall thickness of the former is greater than that of the latter. In general, the lumen diameter increases at the same time the fiber diameter increases. The increase in the diameter of the fiber is roughly proportional to the weight increase due to reaction with acrylonitrile. Photomicrographs of partially cyanoethylated 40s/2 cotton yarn containing 3.8% nitrogen and of the untreated original cotton yarn are shown in Figure 3 (at top of page 138-A).

Resistance of Partially Cyanoethylated Cotton to Microorganism Attack (Soil Burial Test). The most drastic condition for evaluating the resistance of textile materials to microorganism attack which has been developed is the soil burial test. In this test, the fabric is subjected to the attack of both bacteria and fungi. The soil used in these tests at the Institute was composed of Virginia clay, sand, and peat moss mixed together to make a porous mixture described as a "good potting soil." This mixture was inoculated with spores of cellulose degrading fungus, *Chaetomium globosum*, and the surface growing fungus, *Apsergillus niger*, after which it was stored in an incubator at 95% rh and 30 C. The moisture content of the soil was maintained at 25%, and the pH at 7 to 8.

Samples of partially cyanoethylated cotton and cotton duck 1¼" x 6" were placed in the soil vertically so that about one inch of the fabric protruded from the surface. After seven days, the samples of cotton duck were removed; and if they had lost at least 90% of their original strength, the soil was considered active, and the partially cyanoethylated fabric strips were allowed to remain buried for an additional week.

At the end of two weeks, the cyanoethylated duck samples were removed, washed, dried, and the tensile strength determined on one-inch ravelled strips. The change in strength in comparison with the unburied cyanoethylated duck was then calcu-



(Fig. 5) LOSS IN TENSILE STRENGTH of cyanoethylated cotton fabrics of various nitrogen contents during two weeks soil burial test.

lated. The appearance of the cyanoethylated duck samples after two weeks' soil burial along with that of cotton duck samples after one week's soil burial is shown in Figure 4.

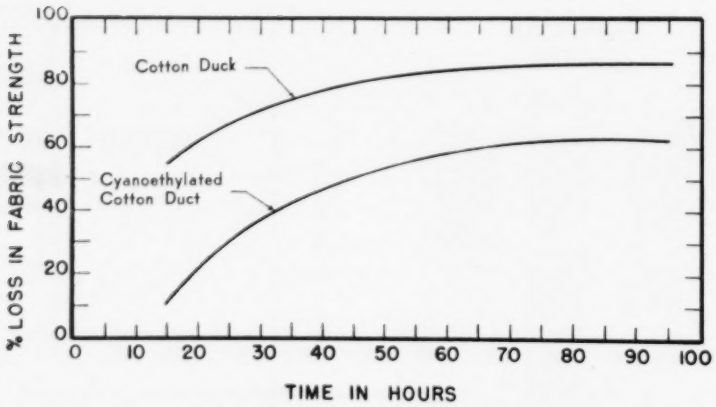
The loss in strength of the cyanoethylated duck after two weeks' soil burial as a function of the extent of reaction with acrylonitrile is shown in Figure 5.

It will be noted that when the nitrogen content of the cyanoethylated duck was within the range of 3.0% to 3.5%, no loss in strength occurred, whereas after one week, the cotton duck had lost 100% of its strength in soil burial.

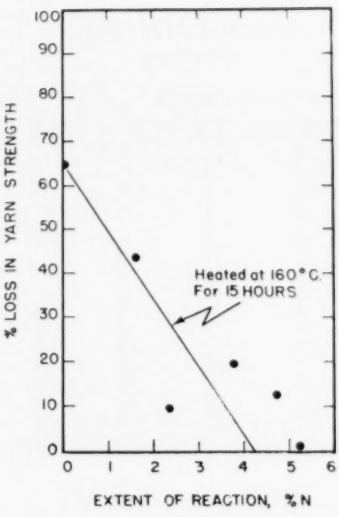
Deterioration tests on cotton yarns were run in a similar manner except that it was necessary to fasten the yarns in a frame during soil burial to prevent loss in twist. 40s/2 and 60s/2 cyanoethylated yarns containing 4.8% and 5.2% nitrogen have been found to suffer no loss in strength after two weeks' soil burial. Yarns containing as low as 3.5% nitrogen have been found to behave in a similar manner.

Resistance of Partially Cyanoethylated Products to Heat Degradation. The cyanoethylated yarn and fabric have been found to be resistant to both wet and dry heat degradation. In general, the cyanoethylated cotton products containing 3.0% to 5.0% nitrogen have been found most resistant to heat degradation.

The following procedure was employed in making tests for dry heat degradation: Eight-ounce cyanoethylated duck and cotton duck test strips 1¼" x 6", as well as 60-yard skeins of cyanoethylated and cotton yarns, were used to deter-



(Fig. 6) LOSS IN STRENGTH of cyanoethylated cotton (2.6% N.) and cotton duck during heating at 160 degrees C (320 F) for various lengths of time. The same type of curves are obtained when yarns are tested.



(Fig. 7) LOSS IN STRENGTH of cyanoethylated cotton yarns of various nitrogen contents during heating at 160 degrees C (320 F) for 15 hours.

mine the effectiveness of the treatment. The test samples were leached in cold running water for eight to fifteen hours prior to testing, after which they were dried and placed in a forced air circulating oven for the designated period of time at the desired temperature.

The one-inch ravelled strip tensile strength of the fabrics and the single end tensile strength of the yarns were then determined and compared with the original strength of the material. The nitrogen content of the cyanoethylated cotton duck in the test was 2.6%. The duck was heated at 160 C (320 F) for periods of time varying from 15 to 96 hours as shown in Figure 6.

It will be noted that although the cyanoethylated duck loses strength during this test, the loss is considerably less than that for cotton duck. The difference in loss in strength appears to be somewhat greater (45%) during the first 15 to 40 hours of heating than subsequent to this time (25%).

The effect of the extent of the **reaction** of cotton yarns with acrylonitrile on the resistance to heat degradation at 160 C after 15 hours is shown in Figure 7.

It will be noted that whereas the untreated yarn lost about 65% of its strength under these conditions, yarns containing in the range of 2.5% to 5.0% nitrogen lost only 0 to 20% of their strength.

Dye Properties of Partially Cyanoethylated Cotton Fabric. It has been found that the cyanoethylated cot-

(Continued on page 188)

TABLE II. Comparison of Dyeing Properties of Cotton and Partially Cyanoethylated Cotton (80x80) Print Cloth Using Various Types of Dyes in Concentrations Required to Obtain Same Shade. The Cyanoethylated Cotton Fabric Used in this Test Contained 1.5% Nitrogen.

Ratio of dye liquor to fabric in all cases was 50:1

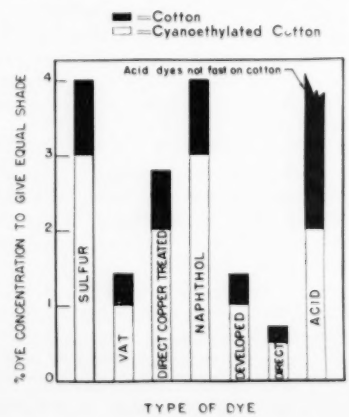
The concentration is based on the weight of dyestuff to weight of goods.

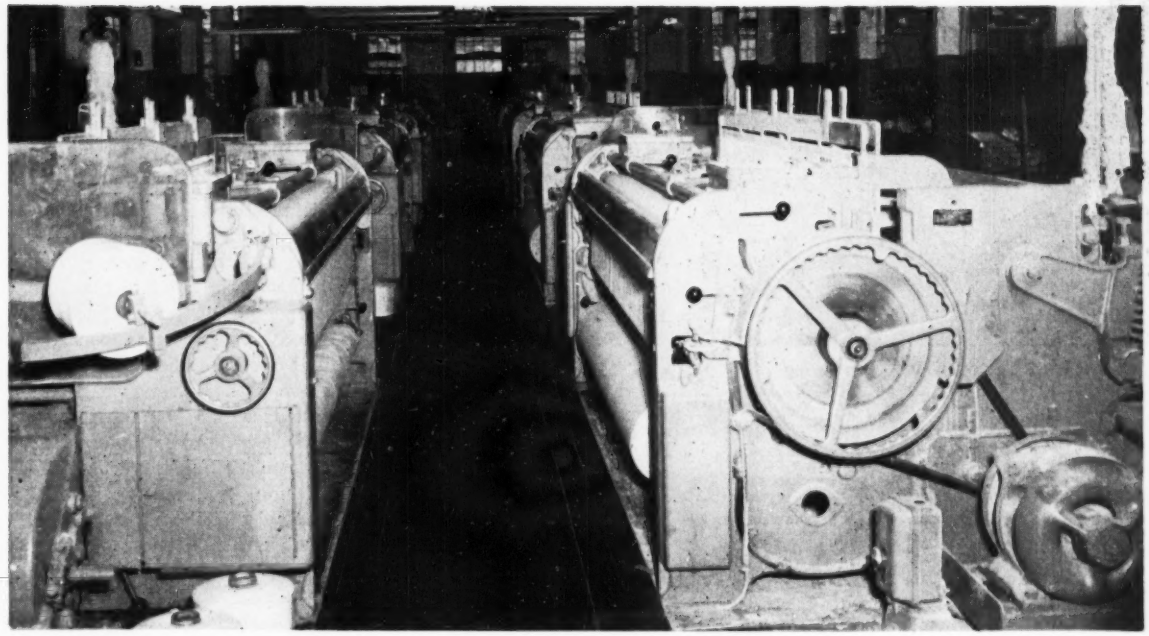
Type of Dye	Name	Per Cent Increase in Dye Used for Cyanoethylated Cotton Fabric	Light Fastness*	Wash Fastness	Wet and Dry Crocking
Sulfur	Sulfogen Golden Brown RCF	33	—	Cyanoethylated cotton and cotton equal	Cyanoethylated cotton and cotton equal
Vat	Ponsol Blue GDD	40	+		
Direct	Pontamine Fast Green 5BL	40	—		
Direct (Copper After-treat)	Coprantine Blue BLL	40	+		
Naphthol	ASSW With Red Salt B	33	+		
Developed	Rosanthrene Red 9BL Developed with B-Naphthol	40	—		
Basic	Victoria Blue B without mordant	60	+		
Acid	Cloth Fast Brilliant Red 38W	——	+		

*+ means cyanoethylated cotton was equal to or better than cotton fabric in Fade-Ometer test

— means cyanoethylated cotton was not as good as cotton fabric in Fade-Ometer

(Fig. 8) DYE USED. A comparison of the amount of dye used on cyanoethylated and cotton fabrics to obtain equal shades. The dyes are the same as those described in Table II.





AN UNOBSTRUCTED VIEW is provided over this portion of the worsted mill weave room where the Warner and Swasey-Sulzer weaving machines are operating. They are only 49 inches high.

A southern worsted mill's experience with the

Warner & Swasey Weaving Machine

Staff Prepared

EXCLUSIVE

A SOUTHERN worsted mill has reduced over-all loom stops by about 20 per cent with an installation of Warner and Swasey-Sulzer weaving machines. The machine is precision-built—timing and settings must be to tolerances previously considered impractical with textile machinery. The results are top-quality fabrics and high production rates. These impressions stand out in this mill's first few months' experience with the machine.

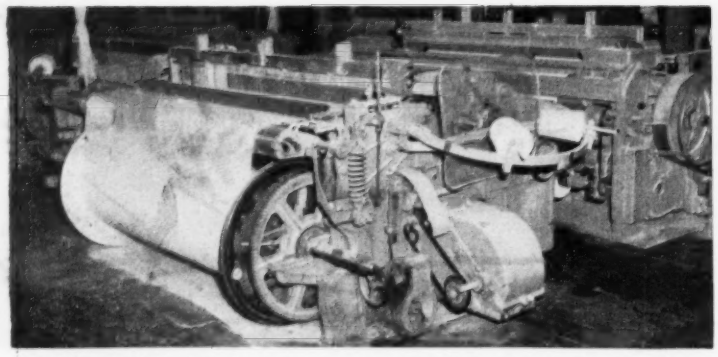
Twenty-four of the weaving machines were put into operation in January, 1953, and a wide range of constructions has been woven on them since, using warp yarns from 1/21 to 2/48 worsted, and filling from 1/18 to 2/48.

The weaving machines are running at 240 picks per minute and producing goods whose width off the loom is about 76 inches. Over-all efficiency is conservatively estimated at 85-90 per cent, or about 98,000 to 104,000 picks per 8-hour shift. As personnel become more experienced with the machine and a production routine is established, it is expected that efficiency will be pushed well beyond 90 per cent.

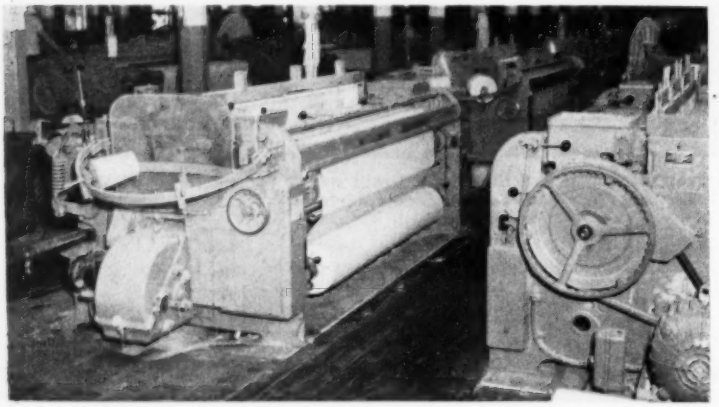
This mill uses a modified Bradford worsted system. Filling yarn for the Warner and Swasey weaving machines is wound into 4-pound cones on Abbott cone winders. Warps are made in the usual way, except that beams are larger.

The unique method of selvage formation on the Warner and Swasey weaving machine, by tucking the cut ends of the filling into the selvage ends of the warp, requires that the construction of the selvage be carefully selected with regard to reeding, drawing-in, and weave. The weave is limited by the harness capacity of

High production . . . No quilling . . . Improved quality
Fewer loom stops . . . reduced burling and mending

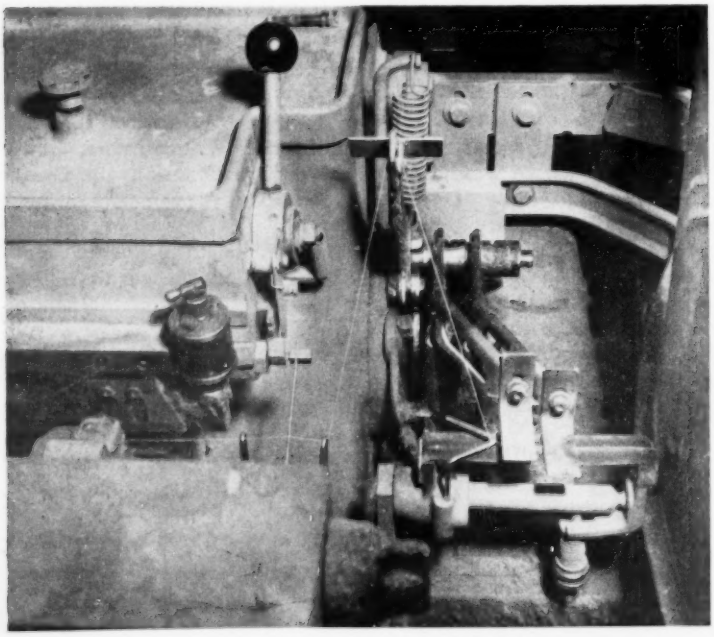


WARP BEAM FLANGE is 30 inches in diameter; let-off, positive and fully automatic, is actuated by warp tension on vibrating whip roll.



CLOTH ROLL maximum diameter is 18 inches, with cloth. Reed space up to 80 inches on this model.

THE PICKING UNIT requires more maintenance than any other part of the machine.

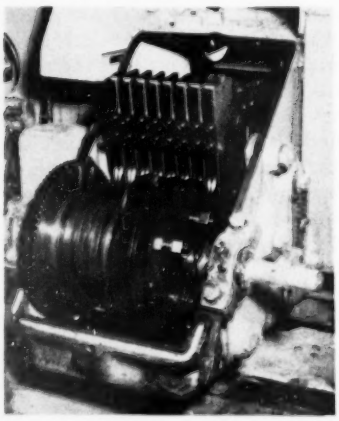


the machine, and is usually a basket weave based on the fabric weave. In reeding, particular care must be taken to prevent errors, since every dent must be used as figured to get a proper selvage.

Results. The most obvious result of the installation of Warner and Swasey weaving machines in this mill was a marked increase in the speed of weaving, to 240 picks per minute. This is made possible principally by precision construction and use of a small shuttle. All gears are either precision-ground or shaved, spline shafts are used throughout wherever heavy duty is required, all bearings are either anti-friction or bronze, and all parts subject to wear run in an oil bath. The shuttle is only 3⅛ inches long by ½ inch wide, which permits a small shed opening and shorter movement of the lay. Other construction details also contribute to the high speed, but these are basic. (See TEXTILE INDUSTRIES, June, 1948, for complete information on construction and operation.)

Over-all loom stops are about 20 per cent less at this mill with the Warner and Swasey weaving machine than with a conventional loom on the same class of goods, even before the higher production of the Warner and Swasey machine is considered. End breaks are reduced by the small shed opening, which means less strain on the warp. Also, the shuttle

OIL BATH lubricates all parts subject to wear. Harness cams are shown here, with cam box cover removed.



Machine Data

Number of weaving machines	24
Picks per minute	240
Number of harnesses	8
Picks per repeat of weave (maximum)	6
Weight of filling package (cone)	4 lb
Cuts per warp	20-30
Horsepower	3

never touches the warp yarn and the travel of the reed is short. Filling breaks are reduced by the elimination of bobbin transfers, with their attendant drag-ins or jerked-in filling.

The basic principle of the Warner and Swasey machine—filling insertion by a gripper shuttle directly from a cone of yarn—has eliminated the quilling process, together with the problem of collecting empty bobbins, stripping, bobbin inventory, etc. Cones are pig-tailed, so that filling runs continuously.

Reduction of end and filling breaks, fewer skips, and elimination of bobbin transfers combine to make an improved cloth; and consequently burling and mending costs are less.

Limitations. The very reasons for the high operating efficiency of the Warner and Swasey weaving machine—its precision construction and basic operating principle—also place certain limitations on its use. These, however, are only limitations insofar as conventional looms also have limitations—each can weave only the range of fabrics for which it was designed.

The machines now in place at this mill do not provide for mixing filling from different cones. Yarn is taken from one cone until it is exhausted. However, a pick-and-pick arrangement which takes yarn from alternate cones is now available, and is to be installed in in the near future. With the present arrangement, yarn uniformity and close inspection are of primary importance to prevent filling bars. This mill has experienced little difficulty in this respect, however. Weaving of fabrics with a multi-color filling is obviously precluded until a filling selector is developed.

Maintenance. These weaving machines have not been in operation long enough as yet tor an estimate to be made of life of parts, or for a schedule of preventive maintenance to be decided upon.

Loom fixing, of course, is critical. Settings must be accurately made to definite specifications. When parts are even slightly worn the machine will not function properly. However, no difficulty has been met or is anticipated in training loom fixers and weavers to handle the new machines.

The importance of daily cleaning and lubrication cannot be overemphasized. Working parts must be kept free of lint; particularly the picking unit, which at this mill is blown down twice per shift.

Experience here has been that the picking unit, and in particular the picking arm and bearings, requires the most maintenance. The picking unit cam must be absolutely true to prevent feeding errors.

To forestall excessive vibration, the machine should be on a concrete base. The machines discussed here are mounted on concrete piers which extend to a firm foundation in the ground. Felt pads are used.

The first few months of operation at this southern worsted mill have convinced the management that the Warner and Swasey-Sulzer weaving machine produces high quality cloth at high production rates, and so is a profitable investment. Additional weavers and loom fixers are being trained, and the machines are being smoothly integrated into the production schedule of the mill.

World Wool Consumption Prospects

"Under normal market influences all the wool available will be bought. Prices will move in accordance with the strength of demand." This is the manner in which the "World Wool Digest" recently summed up world wool consumption prospects.

Among the interesting facts presented in the article are these:

1. Before the war and in 1952 the United States and the United Kingdom consumed 37% of the total estimated quantity of virgin wool processed throughout the world.

2. America remains the world's largest single market for wool (this refers to mill consumption of virgin wool).

3. Per capita consumption of wool in America is lower than in the United Kingdom.

4. Annual consumption of apparel wool in these two countries has been practically the same for the last three years.

5. Proportion of wool going into carpet industry in America is much higher than in Britain.

6. Consumption of virgin wool in Italy, Germany, and Japan is rapidly increasing. Germany and Japan are likely to consume an increasing proportion of the world's clip in the future.

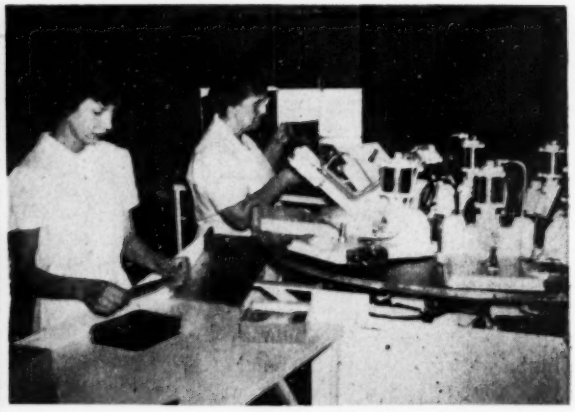
7. It is hoped that the United States will be a much more active buyer in the wool markets next season. Her purchases during the 1952/53 season have been small and it is unlikely that her consumption of virgin wool will show any great increase in 1953.

8. A considerable rise in consumption can be expected for the United Kingdom.

9. Unless Japan can solve her sterling exchange troubles, she will not be able to operate so extensively in the Dominion markets next season.

10. Wool production in the season just ended is now estimated at approximately 2,455 million lb clean. The 1953/54 clip may amount to 2,500 million lb. Based on available supplies of 2,625 million lb in 1952/53 (which included large carry-over stocks in South America) total consumption in 1953 will certainly be higher than the 2,305 million lb consumed in 1952, but supplies available for consumption in 1954 will be virtually limited to the 1953/54 clip and the current trade-held stocks.

ENVELOPES ARE FILLED. Standard Packaging Company furnishes Gotham with specially laminated transparent envelopes heat sealed on three sides. Operatives insert one pair of stockings in each envelope through the open end by means of a custom designed bag filler. Stockings are inserted so that their identification transfer shows right side up on the front face of the transparent envelope. In some instances, an identification label is affixed to the envelope itself. Filled envelopes are stacked flat in four-section carrying racks, each section holding 36 envelopes. Carrying racks are light weight, well balanced, and equipped with a handle at top center. When the rack is fully loaded, the gross is brought over to the vacuum packer.



ENVELOPES ARE SEALED. While one operative places unprocessed envelopes in the continuously rotating vacuum chambers, a second examines sealed envelopes for air tightness. Defective packages are easily detectable since the stockings shift inside at slight agitation of the envelope. 3000 envelopes are turned out hourly by the eight vacuum chambers of the vacuum packer. Processed envelopes are automatically ejected from the rotating table by means of a transfer gate which guides them gently off the table into a chute, whereupon they slide onto the examination table. Here, six envelopes are inserted in a set-up box. Because envelopes are flat, they occupy only two-thirds the box space of ordinary packaged hosiery.

Gotham Hosiery Packs a Wallop

Staff Prepared EXCLUSIVE

Vacuum-packaging gets the customers!

"THE MAGIC WORD in merchandising today is *freshness*," according to Stan Goodman of Gotham Hosiery Company, Inc. Yet, the hurried shoppers and harried sales clerks that are a phenomena of today's market conditions have combined their unusual talents to destroy any attempt so far of the hosiery industry to keep hosiery fresh at the point of sale.

Lost business and silenced full-fashioned knitting machines are the unhappy consequence. And this isn't true of only the full-fashioned part of the textile industry; the condition extends into all soft goods lines—men's sport and dress shirts, half-hose, sheets, pillow cases, women's blouses, underwear, knitted outerwear, and even yard goods sold over the counter.

Soiled Goods. Everyone in the textile business is being plagued by returns of soiled merchandise. Customers want to see, reach, and touch textile products before they buy. This is particularly the case for fashion items. In doing so, a deadly toll of soiled and damaged merchandise is exacted. Profits are cut into all the way up the line. The number of markdowns due to goods manhandled at the store has reached fantastic proportions. Retailers agree that customers just don't care, and well trained, integrated sales people are the exception. Nevertheless, a woman who is sold a piece of faulty goods first accuses the store and then the manufacturer.

Sales Problem. The problem of selling the consumer textile goods is compounded three ways nowadays. There's a shortage of good sales help. Payroll costs are high. So are operating expenses. Unless the textile trade figures out a way to solve this selling dilemma, sales will continue to drop, profits will continue to be lost, and looms and knitting machines must then stop.

Sales Solution. The solution, fortunately, is obvious. Simplified selling and self-selector fixtures will do the trick, but the effort must begin at the mill level. This effort is just as important to the mill as the development of a short cut process or the production of an intriguingly new blend or fine styling.

Gotham has come up with a new

concept of merchandising that might turn out to be the right prescription for curing these ailments. In collaboration with Standard Packaging Company, Gotham has developed a machine for vacuum packaging soft goods under seal so that they will remain fresh and new indefinitely. The machine has taken its place alongside conventional mill machinery at their Philadelphia plant and in Quebec, at their St. Hyacinth hosiery mill.

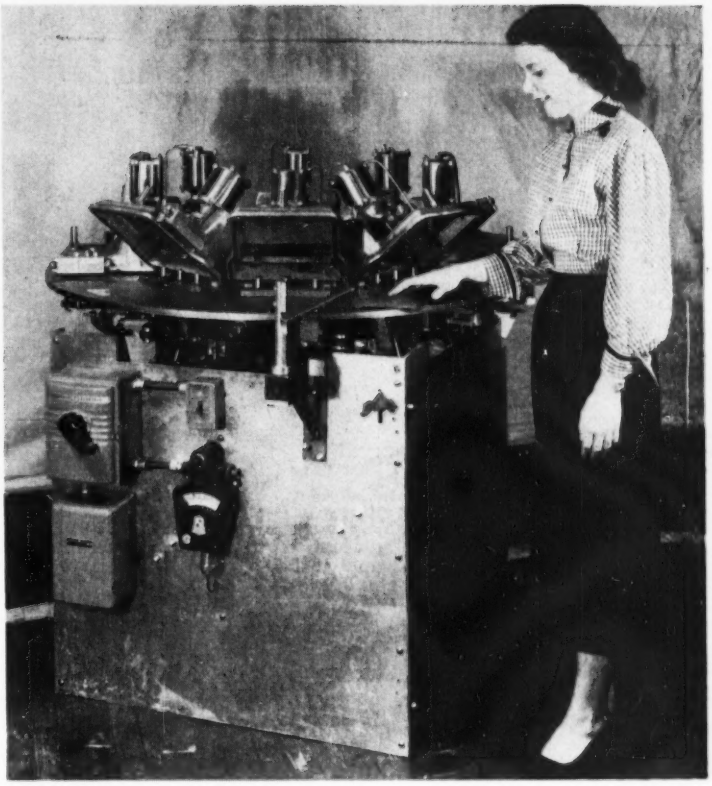
Gotham is vacuum packaging three styles currently, and excellent sales are being tallied up in stores furnished with the new package. The package has proved that a drastic overhaul of selling technique will regain business.

Customer Views—Does Not Handle. An absolutely transparent laminate of acetate and pliofilm was devised so that the prospective customer could rapidly sense color and sheerness. Impervious to vapor, the hosiery envelope will keep its contents protected indefinitely. Ideal atmospheric conditions of the mill are imprisoned in the envelope, thereby keeping the stockings supple up to the time of usage. The laminate stops cold ultra violet and infra red rays which will cause color fading while the envelope is displayed on the counter. Furthermore, the hosiery is protected against fumes and gas fading. And the garment is armor plated against abusive handling, snags, and soiling.

One of the unexpected premiums of this package is the fact that when packed under vacuum, the hosiery lies perfectly flat, won't wrinkle, and won't shift around in the envelope. Because it lies so flat, the envelope occupies very little space which makes it perfect for travel or home storage until worn. Gotham calls these advantages "Perfection, Protection, Flat, Neat."

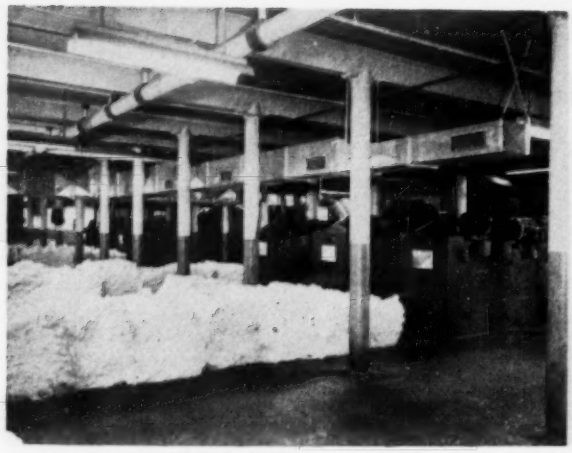
Space savings in the store and weight savings in shipping are two more important features of the vacuum package. Gotham now inserts six pairs of vacuum packed hosiery in one set-up box which is two-thirds of the weight and size of the two boxes of three pairs each formerly shipped out. This is

(Continued on page 233)

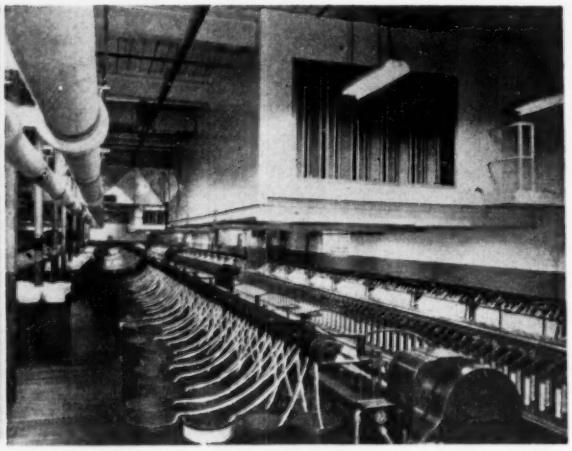


COMPACT MACHINE—VACUUM PACKED HOSIERY. Here's a close-up view of Gotham's vacuum packager. Eight vacuum chambers are radially mounted on a rotating table. Each chamber is furnished with its own electrical compressor which automatically evacuates air when the chamber lid contacts the table. Lids are hinged and cam-operated so that opening and closing occur in regular cycles and are fitted with a heat resistant gasket that forms a tight seal against the table during the vacuum phase of the cycle. Sealing jaws are built into the vacuum chamber lid. Heat sealing temperature and vacuum pressure may be regulated. The counter height machine takes up only 16 square feet of floor space plus necessary working area for two operatives. Standard Packaging Company developed this unique soft goods vacuum packager in collaboration with Gotham's engineers.

GOTHAM'S COUNTER DISPLAY for vacuum packed hosiery is a powerful sales assistant that sells merchandise. Standing between sales clerk and customer, it brings 200 pairs of stockings four feet closer to the buyer. There are three main compartment divisions: Style A short, Style B medium, and Style C long with graduated sizes ranging from 8 to 11½. The unit is inclined at the proper visual slant for ease of readership and selection. The front rail is of clear plastic for product visibility. Two wire stocking holders, one on either side, are provided for draping stockings for customer scrutiny and inspection. Placed on counters where traffic is heavy, such as premium space on the first floor of department stores, the counter display stimulates impulse purchasing.



OPENER ROOM is served by Centrispray washer located in apparatus house in adjacent structure. Note aluminum ductwork and removable grilles.



SUSPENDED STATION in card room. Light weight permitted suspension with few structural changes, leaving floor area free.

Air conditioning and refrigeration at Borden

Mill Determines Optimum

REFRIGERATION and air conditioning equipment at Borden Mills Inc., operated in conjunction with several special accessories, is producing the following results:

(1) Improved efficiency;

(2) Improved quality;

(3) Less moisture necessary to humidify;

(4) Improved cleanliness attendant with less moisture in air;

(5) Less corrosion of machine parts;

(6) Closer control of temperature and humidity;

(7) Less oil in stock;

(8) More comfortable working conditions.

One of the primary objectives in employing refrigeration and air conditioning at Borden was to start control of the moisture content of the stock at the earliest possible stage in processing and keep this control through the final process. Experiments were conducted and records were carefully compiled and studied to determine the level of relative humidity at which cotton can best be cleaned and processed through other operations. First, conditions were controlled and studied in opening; then picking, carding, and on through the weaving operations and cloth room.

W. J. Still, vice-president at Borden, stated that this mill is trying to do the best possible job in producing a competitive product, and efforts to improve quality and lower costs were at the forefront in this project. Mr. Still concluded that cleanliness was a big and costly problem in the mill. Also that it is costly to put enough moisture into the air to condition the stock at relatively high temperatures. These conditions also brought discomfort to the operatives in the various departments.

Other problems attendant with high humidity and temperature were the accumulation of lint and dirt on machine parts, a condition aggravated by excessive moisture in the air. Also corrosion of machine parts is accelerated by high temperature and moisture. The solution to all of these problems was sought in obtaining the optimum conditions of temperature and relative humidity which were ultimately made possible by refrigeration and air conditioning throughout the plant. The Centrispray air washer, manufactured by the Bahnson Co., was chosen by Borden Mills Inc. to fulfill the all-air approach to air conditioning the mill.

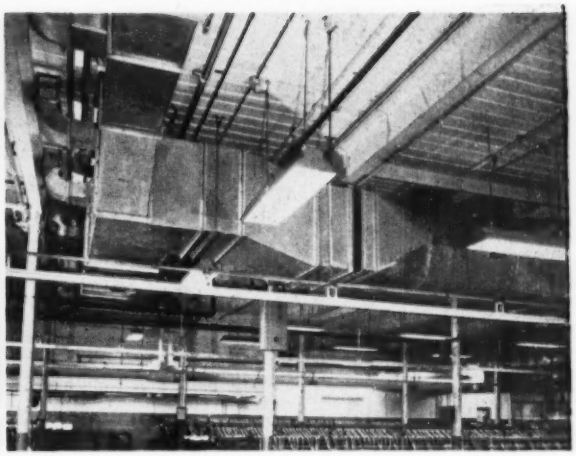
All windows in the building were closed with bricks to reduce heat loads. The light and compact Centrispray air washers were located in the monitor existing over the fourth floor spinning room.

Opening. The first floor opener room in the service building adjoining the mill is conditioned by a single station handling 28,000

Staff Interview

EXCLUSIVE

SPINNING ROOM is conditioned by 18 units, each individually controlled. Note Pneumafil on frames. Exhaust goes down through floor.



DUCTWORK AND PNEUMAFIL exhaust are connected to trunk located on ceiling in card room. This high pressure ductwork is gasketed for tightness.

Conditions; System Maintains

cfm. 55% relative humidity at 80 F is maintained in this area. This station is located in an apparatus room adjacent to the opener room.

Picking. The picker room is conditioned by a suspended unit handling 36,000 cfm and maintaining 80 F and 55% relative humidity.

Carding. The system for the card room handles a total of 216,000 cfm. To prevent spotty conditioning, six Centrispray air washers are suspended along the wall with six individually controlled branch ducts running the width of the room. This work required few structural changes, and the clearance below the suspended stations was sufficient to allow continued use of the floor space for machinery. Roving frames cover about two-thirds of the floor area, and the cards occupy the remainder. 80 F and 55% rh are maintained in this department.

Card clothing remains in better condition now that there is less free moisture in the room.

Conditions Maintained in Departments

Department	Temperature (°F)	Humidity (%) Relative
opening	80	55
picking	80	55
carding	80	55
spinning	80	60
warping, spooling	80	55
slashing	80	55
weaving	80	64
cloth room	80	55

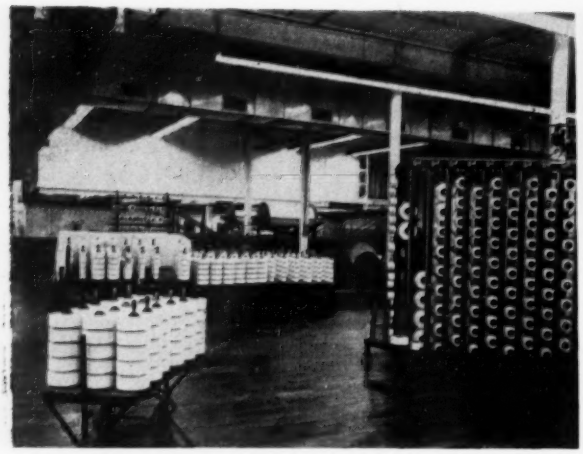
Pneumastop on the roving frames pulls air directly through the stock, thereby making positive the application of available moisture in the air directly to the stock where it is needed. This precludes the necessity of maintaining an excessive amount of unused moisture in the air—moisture that never gets onto or into the stock.

Spinning. The largest single area conditioned by the new system is the spinning room which occupies the entire fourth floor. 18 Centrispray washers, arranged in nine duplex stations in the monitor, handle a total of 737,200 cubic feet of air per minute which is distributed through 18 branch ducts, each individually controlled. Each of the 18 washers has two Type S automatic air cleaners. The spinning room is maintained at 80 F and 60% rh throughout the year.

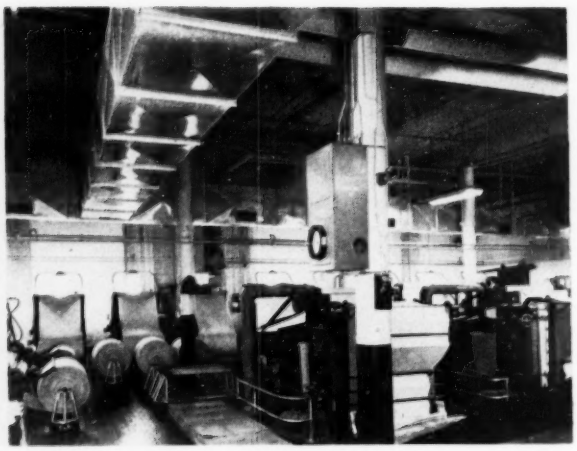
American MonoRail underframe cleaners are on all spinning frames. Overhead traveling cleaners are used in spinning, and Pneumafil serves an additional purpose in that the available moisture is also pulled to the strands of yarn as they approach the air intakes.

In view of cleanliness attendant with the low relative humidity made possible by refrigeration and air conditioning and suction devices employed to direct the available moisture to the stock, there is no manual blowing off—hence no oil is blown into stock in process.

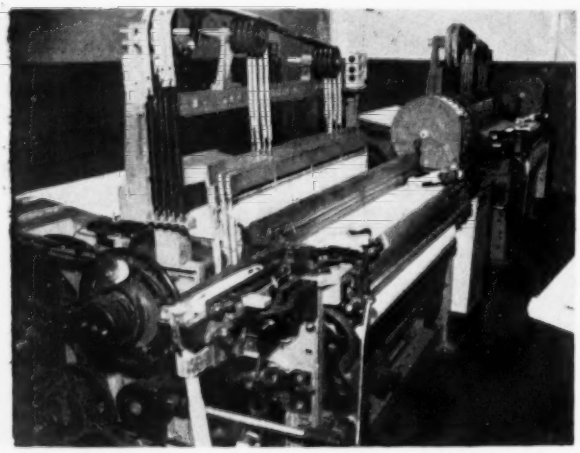
The Pneumafil equipment on spinning frames and roving frames helps overall cleanliness of the



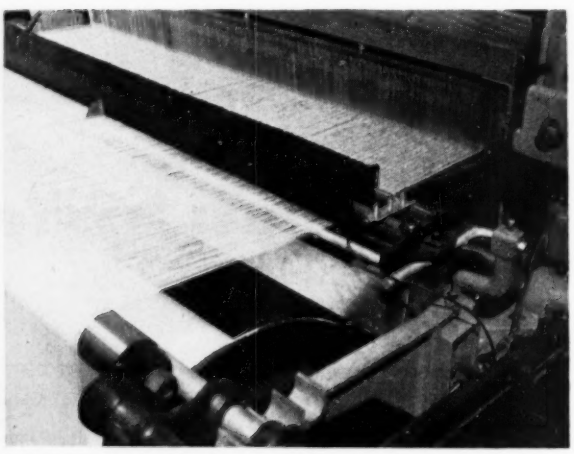
WARPING AND SPOOLING ROOM. Suspended station appears in background. This station also conditions the beam storage area.



CLOTH ROOM is also conditioned by suspended station. Cabinets have visible automatic temperature and relative humidity recorders.



CLEANLINESS of test looms is outstanding after 16 weeks of operation without cleaning. These test looms are operated in a room where relative humidity is kept at 64% at 80 F.



DUCTS DIRECT MOISTURE laden air to the yarn. Note 6" slot which is 42" long and located underneath the drop wires. This arrangement pulls air through the drop wires and yarn at 3200 fpm.

rooms by preventing much lint and fly from entering the air. To prevent the air handled by the Pneumafil system from disturbing the conditioned air in the room, all 322,000 cfm of air drawn through the collector tubes at the frames is taken down through the floor of the spinning room to high pressure ductwork located along the ceiling of the card room.

The air is then collected by four large trunk ducts and delivered to the fourth floor monitor where it is returned to the spinning room air conditioning system as recirculated air from the room, unless all outside air is being used. This exhaust system was designed by the Pneumafil Corp. and manufactured by The Bahnson Company.

Warping, Spooling. The second floor contains the warping, spooling, and beam storage departments. These areas are conditioned by a 40,000 cfm suspended station which maintains 80 F and 55% rh throughout the year.

Slashing. Also on the second floor is the slasher room which is conditioned by a 25,000 cfm suspended system. This system does not require an air washer since humidity control is not required, and all air used in this department is fresh air which is exhausted through the hot-air slashers. The station contains viscous type filters for the fresh air along with heating and cooling coils for temperature control.

Weaving. Looms in the test department were specially developed and constructed in a joint venture of the Borden Mills and Hunt Loom and Machine Works. These looms are equipped with oilless bearings and nylon gears, and all bare metal parts are cadmium plated.

The looms are set to stop with harnesses level on warp breaks. On filling breaks, the looms stop with the shed open and the shuttle in the box. The test looms were

operating with four harnesses and weaving 80 x 80 fabric, 30s warp and 40s filling. An improved model of these looms, designated Model HB3 will be operated in the weave room now being equipped with refrigeration.

One of these test looms was cleaned manually with brushes at the end of 14 weeks. All of the lint and dust that came off could be held in the palm of one hand. An American MonoRail overhead loom cleaner is used over the test looms.

No cleaning was done in the test weave room for 16 weeks, and loom cleanliness was outstanding (see accompanying photos). This is due in part to the ductwork that includes a 6" slot 42" wide under the warp stop motion which receives outgoing air at 3200 cfm, plus the fact that relative humidity is maintained at 64% at 80 F, a combination made possible by refrigeration and air conditioning. A reduction in end breakage has been noted on these looms as compared to regular production figures.

Cloth Room. The cloth room on the first floor is conditioned by a suspended Centrispray station handling 24,000 cfm and maintaining conditions of 80 F and 55% rh.

Air Conditioning Auxiliaries. Bahnson Type S automatic air cleaners were installed at all air washer stations in such a way that both outside and return air are filtered. The air cleaners automatically trap all lint on a fine mesh screen, and a wiper blade periodically wipes the lint from the screen and deposits it in a receptacle at the bottom of the cleaner. A small amount of lint is allowed to remain on the screens to act as an effective filter for dust and other small particles.

All distribution systems are of aluminum and equipped with Type D grilles. The grilles have wide airfoil-section blades for directional control of air flow. A removable core facilitates easy access to the grille and duct for cleaning.

A continuous check on operation of the system is provided by temperature and humidity recorders in each control cabinet. Recorder charts are kept on a large peg board in the plant engineer's office so they are readily available for reference.

Refrigeration is furnished by two Worthington 76C99 centrifugal compressors, each rated at 885 tons of refrigeration. Power is furnished by two 800 hp wound rotor motors. The cooling tower is located on a concrete tank near the mill building. The Bahnson Co. designed, manufactured, and installed the equipment, and the work was done in conjunction with J. E. Sirrine & Co., engineers, Greenville, S. C., who wrote specifications and engineered changes in construction.

Water coils are used for cooling and dehumidification, thereby providing a completely closed chilled water circuit which assures minimum maintenance by keeping lint and dirt out of the water lines and chiller. The water coils also can serve the heating function during winter when the circulated water is heated by a steam heat exchanger at a central point, thus a single set of water circulating lines is used.

Modulating control during humidification is accomplished by regulating the amount of water supplied to the evaporators. Temperature control and dehumidification are accomplished through use of the water coils.

An air conditioned cafeteria and two lunch rooms have been provided for employees. The cafeteria and kitchen are conditioned by a 25-ton package unit, and each lunch room is conditioned by a 7½-ton unit. A separate office building contains executive and personnel offices and the first aid room. This building is conditioned by a 10-ton package unit. Records have been kept on absenteeism for several years, and although employee attendance has always been good at this mill, there has been less absenteeism since refrigeration was installed. Employee morale is notably better since refrigeration was installed, and less fatigue is evident.

Daniel Construction Co., Inc., Greenville, S. C., is now building an equipment room for air conditioning and refrigeration and duct work to serve 350 looms in the weave room.

First Nylon Sheets Wear Well, Combine Luxury and Economy

Nylon is now being used in the manufacture of bedsheets. Pepperell Manufacturing Company is introducing Pepperell Peeress nylon Snug Fit sheets, said to outwear ordinary bedsheets by better than two to one because of the strength and abrasion resistance of the DuPont fiber.

Savings in laundry bills are possible, since nylon fitted sheets are so simple to wash. They are lighter in weight than regular sheets and, according to the manufacturer, need no rubbing or scrubbing, but only a reasonable amount of sudsing in lukewarm water with any mild soap or synthetic detergent. After rinsing they will dry quickly and need little or no ironing. There should be little if any shrinkage, due to nylon's ability to be heat-set to hold its shape.

Soft and sheer, the sheets are made in a fabric construction that "breathes," so year-round sleeping comfort is assured. As the smooth, flat weave has a translucent quality, attractive decorative effects can be achieved by using a colored sheet over the mattress, to give a faint undertone of color to the sheer white nylon.

The new sheets have little bulk, so require a minimum of shelf space — a real boon to apartment dwellers. In bedmaking there is no right or wrong side to worry about, as the sheets are reversible. A special seaming construction gives great strength at the corners, reduces slipping, and keeps the sheets securely in place for night-long comfort.

To accompany the fitted nylon sheets, Pepperell is also introducing pillow cases in the same fabric.

Air Jet Cleaning—

More Trash Out and Fewer Neps

Report based on staff interviews and survey

EXCLUSIVE

SEVERAL mills using a comparatively new type of air jet machine in the cotton cleaning line indicate that since installation the stock is cleaner, more trash is removed, the yarn contains fewer neps, there are fewer ends down in spinning, cloth appearance is improved, and little (if any) spinnable fiber is removed from the stock by the machine.

Typical comments from mills using the Super-Jet* either single or in tandem are:

". . jet cleaner removes lots of objectionable seed, burrs, etc."

". . now get a much cleaner and smoother stock . . . well pleased with the results obtained from this machine."

". . yarn and cloth appearance are better and we have fewer neps."

When queried on the amount of spinnable fiber removed by the jet, some mills flatly stated that no spinnable fiber is taken out. Two others, rather than go out on a limb because what some mills call spinnable fiber others consider non-spinnable, made tests:

One mill reported "16% lint in jet waste, fiber array 17/32" with a uniformity of only 29% — lab reports this as non-spinnable."

The other mill said "about 10 to 12% fibers in jet cleaner waste, and this is ¼" to ⅝" staple; it is not spinnable fiber for our mill."

One mill which has installed the jet cleaners in tandem ran tests on waste percentages by machines; the complete analysis and opening-cleaning layout are presented herewith.

*Manufactured by Lummus Cotton Gin Co. and Aldrich Machine Works; sold and installed by Aldrich Machine Works.

Cotton Waste Analysis

We have completed a 48-bale cotton waste analysis, beginning with the raw cotton and continuing through the pickers.

The figures show the opener line removed 10.6% of all the waste made, the cleaning line removed 52.6%, with 29% of this being removed by the Super-Jet cleaners. The pickers removed 22%. This leaves the 2.6% sweeps and 12.2% invisible loss to make up the 100% of waste made. The invisible loss includes the dust pit, fly, dirt, etc.

Cleaning Line No. 2 removed the most waste and Line No. 1 the least. We do not know the amount

SUMMARY OF WASTE

	Pounds	% Based on Cotton Fed in	% Based on Total Waste Made (Excluding Bagging and Ties)
Cotton Fed In	24,059	100.0	
Bagging	555	2.3	
Ties & Buckles	437	1.8	
Opener Hopper Motes	148	.6	10.6
Cleaning Line Gyrator	43	.2	3.1
Cleaning Feeder—Line No. 1	26	.1	1.9
Spike Beater No. 1	29	.1	2.1
Spike Beater No. 2	12	.1	.9
Super-Jet No. 1	69	.3	5.0
Super-Jet No. 2	63	.3	4.5
Superior Cleaner	14	.1	1.0
Total Waste—Line No. 1	**213**	**.9**	**15.4**
Cleaning Feeder—Line No. 2	26	.1	1.9
Spike Beater No. 3	35	.1	2.5
Spike Beater No. 4	18	.1	1.3
Super-Jet No. 3	81	.3	5.8
Super-Jet No 4	58	.2	4.2
Superior Cleaner	22	.1	1.6
Total Waste—Line No. 2	**240**	**1.0**	**17.3**
Cleaning Feeder—Line No. 3	28	.1	2.0
Spike Beater No. 5	29	.1	2.1
Spike Beater No. 6	16	.1	1.2
Super-Jet No. 5	71	.3	5.1
Super-Jet No. 6	61	.3	4.4
Superior Cleaner	30	.1	2.2
Total Waste—Line No. 3	**235**	**1.0**	**17.0**
Picker Gyrator Motes	62	.3	4.5
Picker Cylinder Motes	244	1.0	17.4
Sweeps	36	.1	2.6
Invisible Loss (Dust Pit, Fly, etc.)	168	.7	12.1
Cotton in Laps	**21,678**	**90.1**	

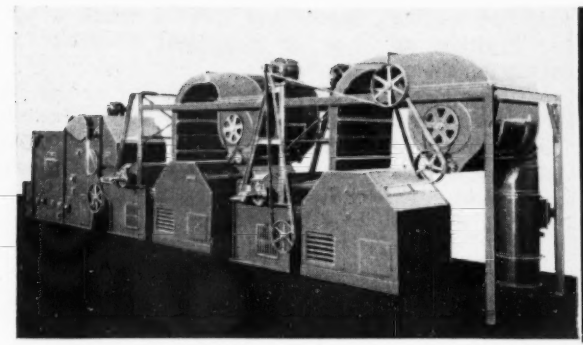
ACTUAL WASTE EXCLUDING BAGGING AND TIES

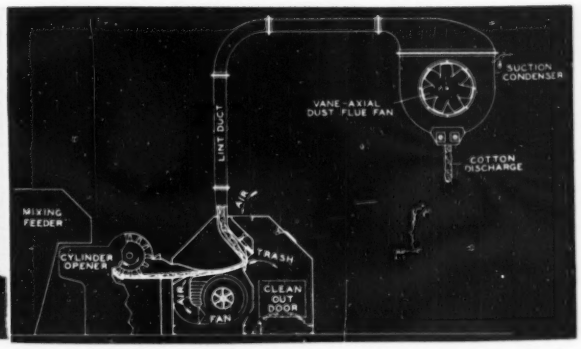
	Pounds	% Based on Total Waste Made
Opener Hopper Motes	148	10.6
Cleaning Line Gyrator	43	3.1
Cleaning Line Feeders	80	5.8
Spike Beaters	139	10.0
Super-Jet Cleaners	403	29.0
Superior Cleaners	66	4.7
Picker Gyrator Motes	62	4.5
Picker Cylinder Motes	244	17.5
Sweeps	36	2.6
Invisible Loss	170	12.2
Total Waste	1391	100.00

GRADE AND STAPLE OF SET RUN

12 B/C—St. Low Middling—15/16"—Compressed
12 B/C—Low Middling — 1" — Compressed
6 B/C—Low Middling — 1" Flat
12 B/C—Low Middling Bright — 1" — Compressed
6 B/C—Low Middling Bright — 1" Flat

48 B/C Total





OPENING LINE utilizing air jet type cleaners in tandem is shown in photo at left. Cross section sketch at right of one Super-Jet machine shows principle of operation.

The accompanying photograph of waste removed from four types of cleaners in a mill's cleaning line shows the kind of trash removed by the cleaners (photo not made at same mill performing the waste test).

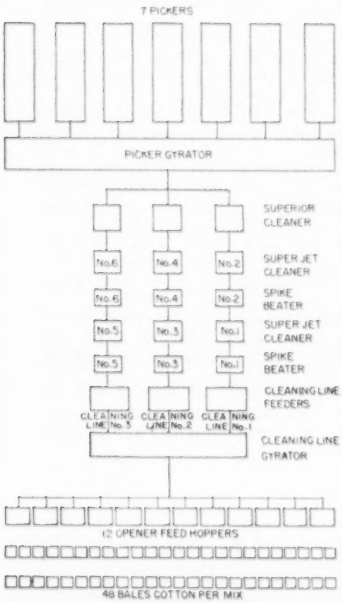
How Jet Cleaner Operates. The illustrations of the machine show the principle of its operation in a cotton cleaning line. The cotton which has been put through the customary blending feeders is fed into a mixing feeder for further blending and better tearing up into small masses, and is then fed through an opener section equipped with the Aldrich cylinder beater. A relatively thin sheet of cotton is fed into this beater; it delivers about five blows per inch.

By feeding an extremely thin sheet to the beater, it seems that no tight felt can be formed at the feed rolls to grip foreign matter so that the beater can break it up. The function of this beater is to prepare the cotton for the jet cleaner, and only incidentally to do any cleaning itself.

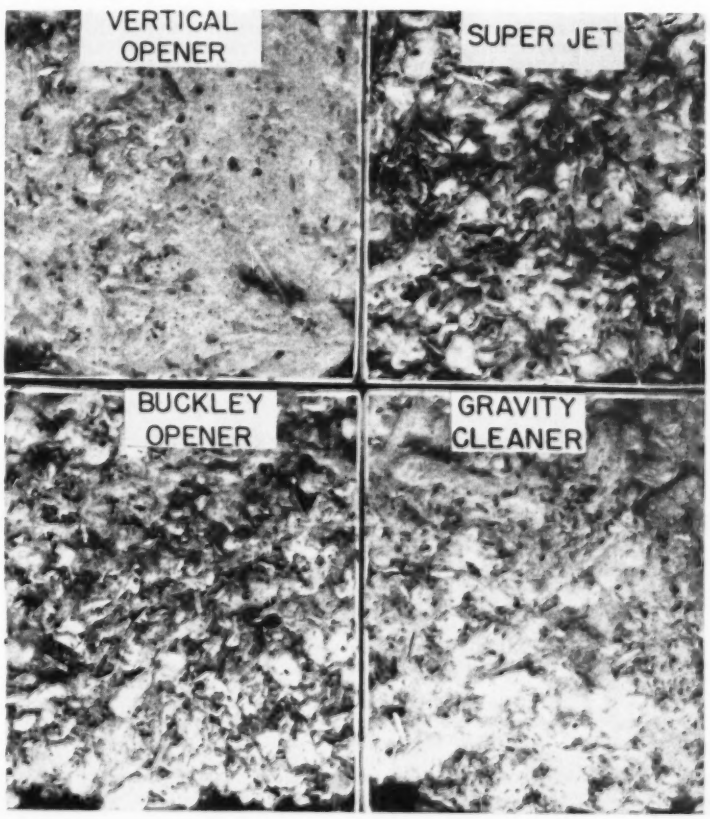
The grid bars under this cylinder beater take out a certain

of cotton passing through each of these lines, but the breakdown on these is interesting.

CLEANING MACHINERY LAYOUT



KIND OF TRASH REMOVED by four types of cleaners in one mill's opening line is pictured here. Photo was not made at the same mill where this waste test was performed.



amount of trash, but this is regarded as incidental, and the jet cleaner is depended upon for the major portion of the cleaning since the trash which the beater fails to take out is not broken up into finer particles to increase the difficulty of further cleaning.

The finely divided lint leaving the cylinder beater is picked up by an air blast from the fan shown in the bottom of the jet cleaner, and blown at high speed toward the cleaning orifice in the bend of the flue. This cleaning orifice can be adjusted to take out practically any type of waste which may be considered desirable for removal.

Above this cleaning orifice, a suction is imposed by the operation of a high-speed axial-flow fan so that there is a balanced draft at the cleaning orifice. The

Development of Cleaning Cotton With Air at the Mill

The invention of the saw-type cotton gin in 1793 made cotton a very important world commodity. From the time it was planted until it was ginned, cotton required a tremendous amount of painstaking hand labor. Before the First World War, cotton was always picked as soon as the bolls opened, and the picking was done very carefully by hand to avoid getting any bract or leaf trash mixed up with the cotton.

The gins at that time were not designed to do cleaning, and were intended solely to take the lint off of the seed and remove a few motes. Damp cotton could not be ginned; first it had to be dried carefully in the sun.

Practically no cotton mills in the United States were equipped with any kind of cleaning machinery for removing the sort of trash which is commonly found in even the best grades of cotton today. The pickers took out quantities of motes, and the cards were supposed to get the rest of the trash. Few, if any, opening and cleaning rooms, as such, existed in this country.

Beginning about 1915, the industrialization of the United States proceeded at a very rapid pace, and labor was needed throughout the industrialized sections of the country; this need drew heavily on the unskilled farm people in the South.

At the same time, the war, and the boom conditions which followed it, created a big demand for cotton. The farmers were perfectly willing to grow it and the ginners to gin it with such equipment as they had, but without adequate picking labor, the crop was gathered slowly and inefficiently, and the simple gins of the time turned out a grade of cotton which American mills were not fitted to handle.

Beginning about 1920, American cotton mills began to put in more and more cleaning machinery for handling the lower grades of cotton, and the manufacturers of gin machinery began to devise precleaning machinery for removing the bolls, sticks, stems, chaff, grass, and similar rubbish found in a typical truckload of cotton brought to a gin.

The ginners have accomplished wonders in removing this foreign matter in the ginning of cotton, but as fast as improved ginning methods came into use, the farmers have found it practical to bring dirtier and dirtier stock to the gins. The excessive amount of precleaning machinery necessary to remove trash which would be ground up by the gin saws into so many fine particles as to ruin the cotton, does. in itself, tend to create a good deal of broken foreign matter which the gins can not remove.

Up until a few years ago, only a limited number of American mills were equipped with cleaning machinery capable of dealing with cotton containing quantities of this foreign matter, and no American mills were equipped with machinery which could clean the stock without damaging it to some extent and increasing the quantity of neps in the cotton.

Some years ago, a cleaning machine, termed a "re-gin," was devised for removing the trash from very dirty cotton. This machine consisted essentially of a saw cylinder, somewhat like a card lickerin, which whipped the cotton over grid bars for throwing out the undesirable foreign matter. The regins did good cleaning, but very serious damage to the cotton fiber, and these machines practically disappeared from use for a number of years.

Just a few years ago, however, the increasing problem of getting lint cleaned at the gins led to a revival of this type of cotton cleaner. One gin manufacturer continued to insist that these saw cleaners were injurious to the staple and would break up quantities of motey material into neps, and brittle foreign matter into pepper trash. This manufacturer, in seeking a more effective means of separating trash from cotton, hit upon a new idea or principle for cleaning cotton.

This cleaning method was based on the principle of centrifugal separation in a current of air.

Some cotton cleaning machines at the gin have employed the principle of centrifugal separation with beaters or saw cylinders, which have whirled the cotton over grid bars to throw out the material which is heavier than the lint. Some of these machines have broken up so much of the foreign matter, while attempting to remove it, that although they took out large quantities of waste, the yarn still seemed dirty after the cotton was presumably precleaned. Other conventional gin cleaners have had a tendency to make the cotton stringy, so that the foreign matter has fibers tightly wrapped around it; and the pickers at the mill tend to break up the foreign matter, and the cards to continue this breakage.

In the air jet cleaner at the gin, instead of thrashing the cotton over grid bars with one or more beaters, the lint is blown at very high speed through a flue with a sharp turn in it. The cotton leaving the gin saws is removed from these saws by an air blast, and the lint is in a more thoroughly opened condition than it will be again until it gets to the cards in the cotton mill. When this well-opened lint is passed through this cleaning flue rapidly enough, the heavy matter borne in the air stream resists the tendency to make the sharp turn in the flue, and can be allowed to fly out of a cleaning slot placed in the bend in the flue.

It must be remembered that the force of impact of any moving body is proportional directly to its mass, and to the square of its velocity. This principle permits the centrifugal separation of substances having a very slight difference in specific mass. It is the principle employed in a cream separator, and in the industrial centrifuges, which can separate two liquids of very nearly the same specific gravity. Very high speed is required, however, for efficient separation.

In the cotton gin, the freshly separated fibers were blown through this air cleaner before going to the condenser feeding the press for making the bale, and remarkable quantities of loose foreign matter of the most objectionable sort were taken out of the cleaner in this manner without damaging the fiber or breaking up the foreign matter.

The success of the cleaner in gins was so immediate that its manufacturer designed a model for use in cotton mills. This was first announced to the public in TEXTILE INDUSTRIES in October 1950. A great deal of experience with this Super-Jet Cleaner in cotton mills has now led to the conclusion that the machines should be operated in tandem, and that the cotton should be fed to them with the smallest possible amount of beating consistent with getting the stock well enough opened to be cleaned.

pressure fan naturally tries to blow everything out through this cleaning slot, while the suction fan exerts a pull sufficient to keep the light stuff in the flue, but let the heavy stuff fly out. The setting of the cleaning orifice determines what comes out.

On very low grade cotton, a mill might consider it desirable to remove nothing but bark, shale, stems, grass, and similar trash, without being concerned much about the motes and neps.

On a Strict Middling staple cotton, it would be most important to take out all of the motes and neps which could possibly be removed, and a proper setting of the cleaning slot will throw out much neppy material and tiny particles of fractured seed covering, which would otherwise cause quantities of specks in the yarn.

The velocity of the air at the cleaning point will vary from about 6,000 to 10,000 feet a minute, depending on the setting of the air orifice, and at that speed, practically anything, even minutely heavier than the lint, tends to separate from it. This separation can be determined by means of the adjustable cleaning orifice, and the right amount of suction can be imposed to keep the lint inside of the machine, but permit material slightly heavier than the lint to fly out of it.

Since it has no moving parts, there is nothing in the machine to damage the cotton or break up the foreign matter. Pieces of grass five or six inches long, bits of jute bagging several inches long, or individual strands of jute or sisal, have been known to come out of the jet. The speed of the air transporting the cotton through the cleaner tends to strip out much of the dust in this cotton with no tendency to make the cotton stringy or ropy. Since the machine does not damage the cotton, mills have found it possible to operate two or more of these in series.

In the tandem arrangement, the cotton, after passing through the first jet cleaner, is fed by its condenser into another cylinder type opener for feeding to the second jet cleaner. The web fed by the condenser to this cylinder opener is very thin and tender. This opener delivers about two and one-half blows per inch on a light web that is not matted down by the feed rolls to permit breaking up of the foreign matter or motes by the beater.

This second jet cleaner will normally take out about two-thirds as much waste, by weight, as the first cleaner, but on many types of cotton the quantity of waste by volume is practically the same in the second cleaner as the first one. The first machine gets the bulk of the very heavy foreign matter, while the second one takes out lighter material, which can be better removed after more thorough opening and blooming of the stock in the first unit.

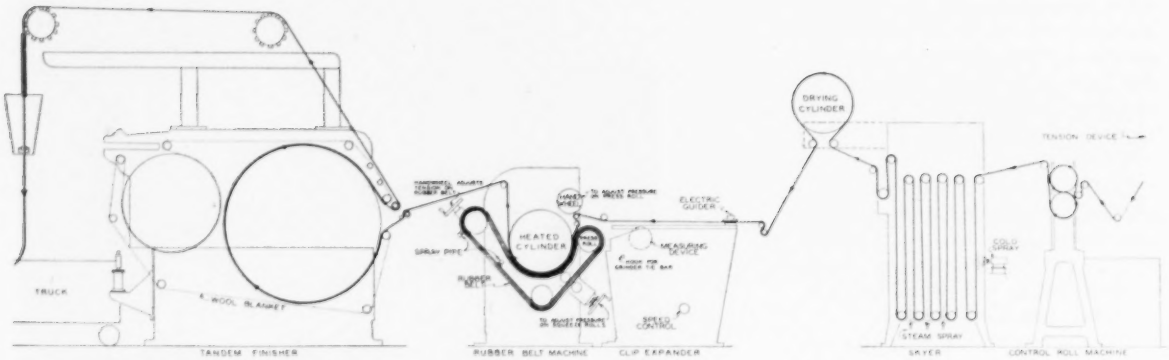
Offhand Care For Off-Loom Fabrics

Going to blow her nose? No, but this lady's supervisor will blow his top if she chances to get any finger marks on the goods being examined. So, when her hands are dampened by perspiration or have become soiled in some way, she reaches for a heavy duty Scott paper towel in a handy dispenser fastened to the inspection frame.

The Altoona, Pa., mill of Schwarzenbach Huber Company found this convenience to be exceptionally effective in guarding fabric quality. Current production centers around off-loom acetate satin constructions. This class of goods is notoriously sensitive to soiling and everything shows up so much more on its bright surface.

Since off-loom fabric bypasses finishing and goes directly to the cutting table, it must be in perfect condition. There's no provision for scouring out mill stains. Scouring produces a drastic change in the warp-sized hand of the fabric and no way has been discovered to reproduce it in piece goods finishing.

More than ordinary care is needed to maintain perfection through quilling, slashing, weaving, and other handling operations. In addition to electrostatic air cleaning, grass-covered lawns surrounding the mill, grease fittings on machine bearings, dust-resistant floors, frequent vacuum cleanings of the interior building, and many other mechanical aids for reducing grease, soil, and air-borne dirt, this mill has made its employee group a vital cog in the keep-it-clean program. Posters and meetings keep them fully informed about the heavy financial losses sustained when goods are marked-down, and as a result, they have a healthy respect for the liberal scattering of paper towel dispensers throughout the mill.



Flow Plan of Rubber Belt Compressive Shrinking Range. This simplified drawing shows how cloth passes through conventional equipment until it reaches the rubber belt machine. Note that the position of the cylinders on the tandem finisher are reversed when compared with a conventional finisher. On rubber belt unit, handwheel at left places tension on rubber belt. Handwheel at lower right regulates pressure of rolls which squeeze water from rubber belt (sprayed thereon to cool it).

Mill Report on the New Rubber Belt Compressive Shrinking Machine

Finisher Gets Improved Product

OUR finishing plant has had in operation for several weeks the new compressive shrinking range that utilizes a rubber belt instead of the wool blanket, for producing "Sanforized" fabrics. The rubber belt machine, which is where shrinkage in the fabric takes place, was installed so that we could get an improved finish on the high type, fine fabrics that we process.

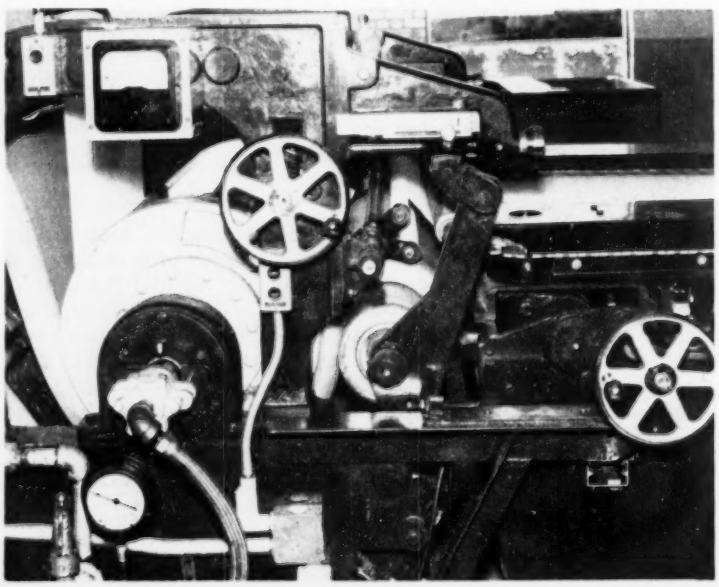
Can Change Styles Quickly. Not only is the finish improved by our securing a smooth, silky hand for the fabric, but we also can change styles of fabric within seconds by simply shifting hand levers on the machine—thereby gaining production which otherwise would be lost while changing the blanket and feed rolls on the machine that utilizes the wool blanket.

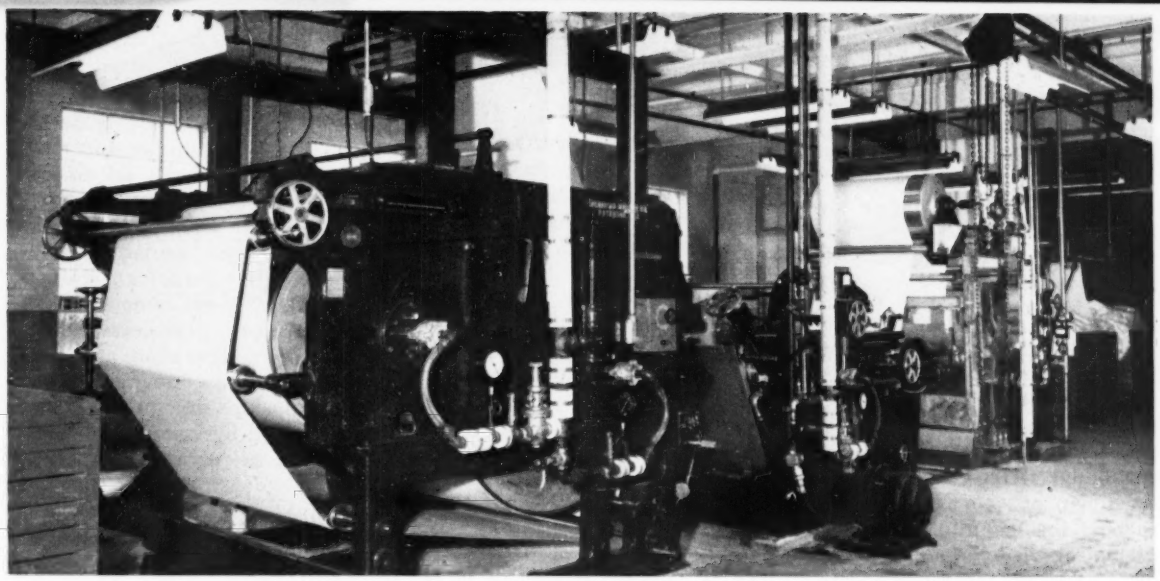
Range of Fabrics Processed. On the rubber belt machine, the same rubber belt is used for all types of fabrics; in fact, there is only one

Results at Russell Manufacturing Company with Rubber Belt Compressive Shrinking Machine

- Improved finish (hand) on high type fabrics.
- Quick change of styles (by gear shift).
- Long life of rubber belt; no break-in period.
- No hold-up for reprocessed or short lots.
- Almost instantaneous control of shrinkage.
- Down-time for blanket change eliminated.
- No cylinder and shoe maintenance.

Rubber Belt Unit (left view). Cloth passes from clip expander around scrimp bars, between rubber belt and cylinder, and onto tandem finisher (not shown). Handwheel in foreground adjusts pressure of roll (to right of cylinder) against cylinder and rubber belt. Meter for continually indicating shrinkage in inches and percentage is shown at top left. Note that rubber belt is two inches thick.





Range at Russell Follows Plan at Left. Rubber belt unit in picture has motor for belt grinder beside it. Only bottom of large drying cylinder may be seen in this view of tandem finisher. Clip expander is lower than top of rubber belt unit and only side and not path of cloth may be seen.

and Quicker Style Flexibility

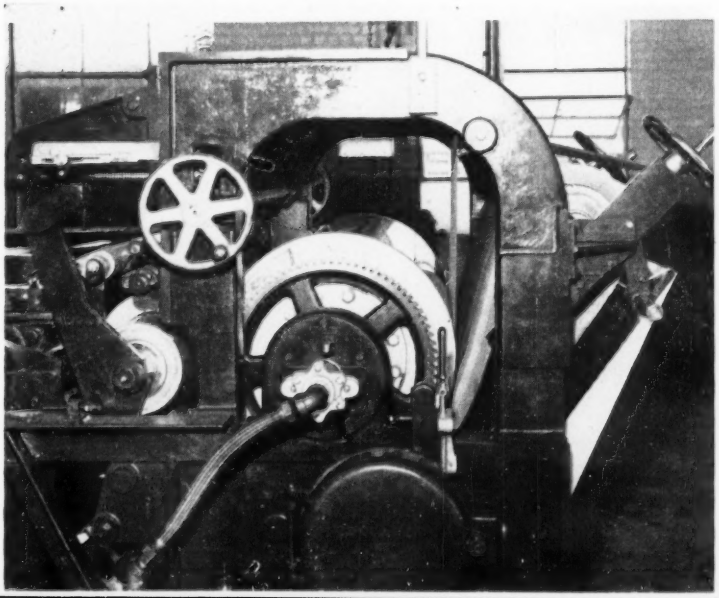
By W. O. Bozeman
Superintendent, Bleachery Division
Russell Manufacturing Company
Alexander City, Alabama

EXCLUSIVE

"style" belt being produced for these machines. Although we have shrunk fabrics ranging from 1.80 yd/lb herringbone twill to 5.50 yd/lb prints, certain types of cloth such as denim, with high shrinkage, must still be processed on wool blanket equipment.

Rubber Belt Has Long Life. As may be seen, we shall reduce expenditures for wool blankets. This will be offset somewhat by the cost of replacement rubber belts, but at this time we have not worn out a rubber belt. And my understanding is that rubber belts in use in other plants have not worn out since the ranges were installed. Therefore, no comparative life on the yardage basis of the rubber belt and the wool blanket can be made at this time.

Rubber Belt Machine (right view). In this view, cloth passes from left to right. Handwheels at top right are for adjusting rubber belt to keep it centered on roll. Handwheel shown at top left (as in opposite view) controls pressure of roll against cylinder and rubber belt. Note ample oil reservoir for lubricating bearing of cylinder (center of photo).



No Break-in Period for Belt. To us, one important factor that has been eliminated on the rubber belt machine is the gradual breaking in of the wool blanket, its intermediate period of useful life for operation, and its gradual deterioration until replacement is necessary. During the periods that a new wool blanket is being broken in and on the last quarter of its useful life, the finish on the fabric is not as pleasing as during the intermediate period.

With the rubber belt machine, replacement of the belt is not necessary until it wears out or

breaks; the belt can be ground to improve fabric finish while it is still on the range, and then it is as good as new.

The time spent changing blankets and feed rolls for different fabrics, or for changing feed rolls for the same fabric as the blanket wears, is also eliminated.

Can Run Short Lots Immediately. Often finishers find it necessary to reprocess goods which are not up to grade. When they must pass through the compressive shrinking range equipped with wool blankets, it may be necessary to hold the lot until the range is set up for the lot. Or if short runs are necessary, the range must be changed over for the goods to be run, else held over until the range is set for similar goods. With the rubber belt machine, which utilizes the same belt for all fabrics, the short runs can be handled at any time by stopping the machine only long enough to shift levers, a matter of seconds.

Furthermore, the control of amount of shrinkage is practically instantaneous even while the lot is already in the range.

Ease of Operation. Operatives find the new range easy to run, easy to maintain, and simple to check for processing results. For instance, a meter on the range indicates continually the shrinkage in both inches and percentage, a visual check at all times. Operating levers and handwheels are handy, and the cylinders and rubber belt are not enclosed, providing for quick inspection.

Tension on the rubber belt is maintained by a handwheel, but we have not found it necessary to regulate the tension for different fabrics. Only the position of the belt is adjusted to keep it in the center of the rolls.

Operating Pointers. When the range is to be stopped over night or week-ends, after cutting off the steam we let the range run until it cools. Then we relieve the pressure on the rolls. As on conventional equipment, the sprays must be kept clean at all times.

Should the rubber belt be punctured, as our belt was in crating, it can be vulcanized and then ground. To grind, it is only necessary to back the clip expander off far enough to install an emery-covered roll, set, and start grinder.

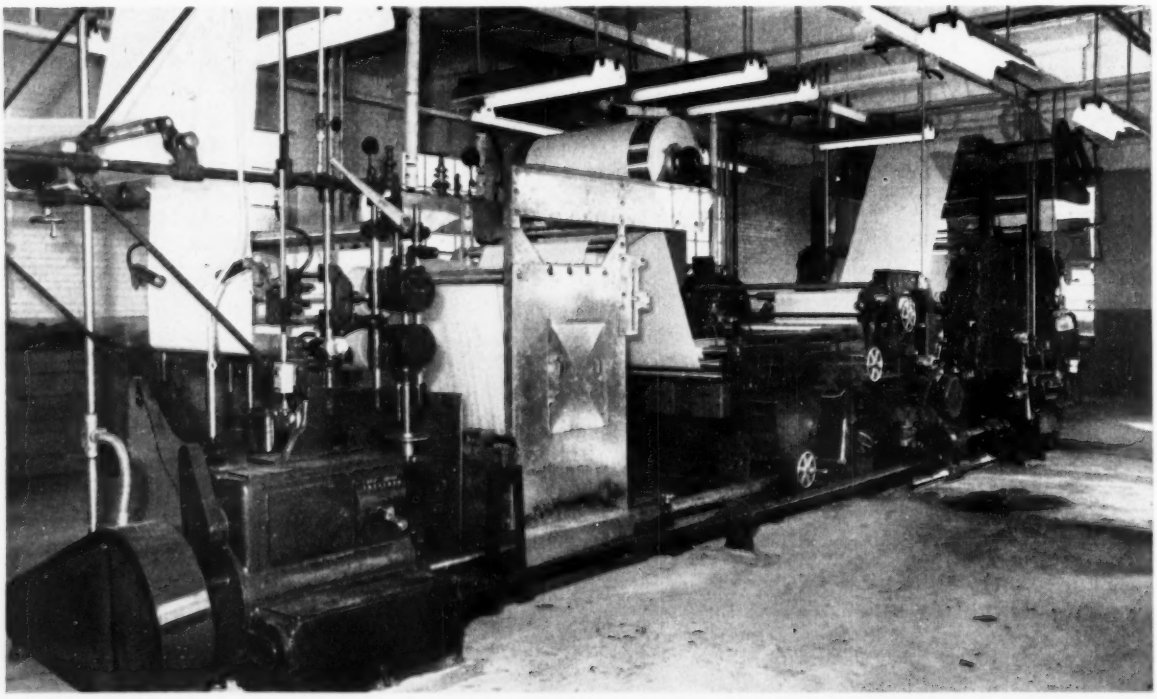
The biggest job when grinding is cleaning the equipment and room after fine particles of ground rubber have been removed from the rubber belt. In our case the entire grinding operation and subsequent cleaning require about four hours; this time probably can be shortened by means of a cover to prevent the rubber from spreading to a wide area.

Frequency of grinding periods is not known at this time because very little grinding has been done except after vulcanizing the belt, and for experimental purposes. It appears now that we will be able to run at least a million yards between grindings. However, the need for grinding will make itself known in the appearance of the cloth and the tackiness of the rubber belt.

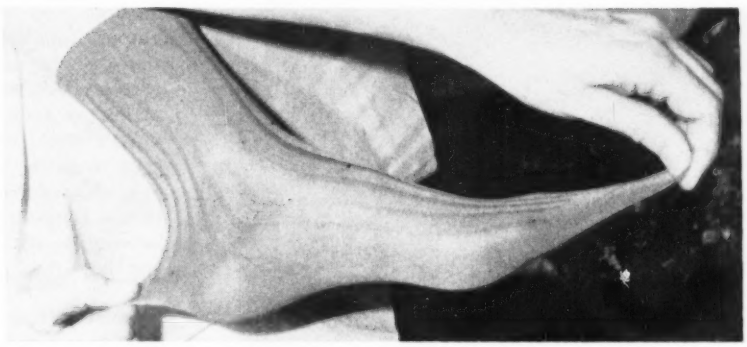
No Shoes. Inasmuch as the rubber belt machine is not equipped

(Continued on page 235)

Drive Side of Compressive Shrinking Unit showing (left to right) motor and gear box, and main shaft, tension device, control rolls, skyer, heated can, clip expander, rubber belt unit, and tandem finisher. When converting to rubber belt machine, all of present equipment except the main wool blanket unit may be utilized; however, the positions of the cylinders on the finisher unit must be transposed.



Knitting Helanca



Foot of this sock, which is made from Helanca (the filament nylon yarn with an unusual amount of elasticity), measured 7½ inches before the sock was pulled onto the 9-inch long foot. Although a good fit was obtained, a much larger foot could be accommodated as shown here. The wearer stretched it to 13 inches long with ease.

By Richard Carter

EXCLUSIVE

AMONG recent throwing developments is the addition to the nylon family—Helanca. In simple language, Helanca nylon is ordinary filament nylon especially processed so the yarn will have an unusual amount of elasticity. The patented process was developed in Switzerland, and several American firms have been licensed to produce Helanca nylon. Due to its inherent elasticity, this yarn has been called elastic yarn, rubber yarn, stretch yarn, etc., by many people both within and out of the knitting industry. Socks and anklets made of Helanca have been given numerous names intended to describe their unusual stretch quality.

Wound tightly on cones, Helanca nylon looks very much like any one of a half dozen other synthetic yarns, but when it comes off the cone, immediate contraction takes place which gives the appearance of a large strand of soft, fluffy yarn. Helanca nylon is unusually strong.

Knitting Problems. It would be difficult to describe all the knitting problems (and their remedy) which occur when Helanca yarn is used on seamless machines. Much will depend on the type of machine being used and whether or not the machines are fine gauge or coarse gauge machines. On the former, one end of Helanca yarn will be used for each knitting feed. On the latter, two ends per feed are generally used, depending on the amount of filament in each strand of yarn.

For example, plain fabric, single feed, single cylinder machines such as Banner, Scott & Williams, or Standard, will give less trouble than double feed, double cylinder, broad rib machines such as Bentley or Scott & Williams Komets. The latter will knit Helanca nylon yarn just as readily as the former but there is a great deal more knitting being done on broad rib machines than on plain fabric machines.

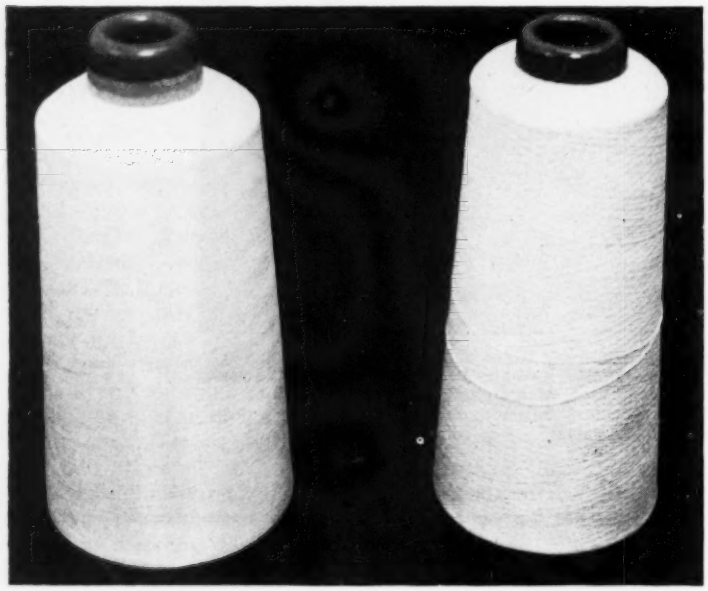
Keep Feeds Balanced. One important factor which contributes much toward producing good broad rib fabric on machines of the Komet type is keeping the respective knitting feeds properly balanced regardless of what kind of yarn is used. This factor becomes still more important when Helanca nylon yarn is used. On broad rib machines, for example, it becomes necessary to keep two feeds in the upper cylinder and two feeds in the lower cylinder properly balanced to knit the same length of stitches in both cylinders. In other words, knit the same length of stitches on four feeds and two cylinders all at one time.

This procedure may sound complicated, and it is to a certain extent, but that is part of what it takes to produce well balanced Helanca nylon hose with plenty of stretch. Balancing the knitting feeds on any multiple feed machine is not difficult. But the tremendous amount of stretch in Helanca yarn brought forth the necessity to develop new methods for getting this important job done properly.

The producers of Helanca nylon suggest the use of less tension than would normally be used on other types of yarn. This is sound advice, but from actual experience I would suggest reducing the

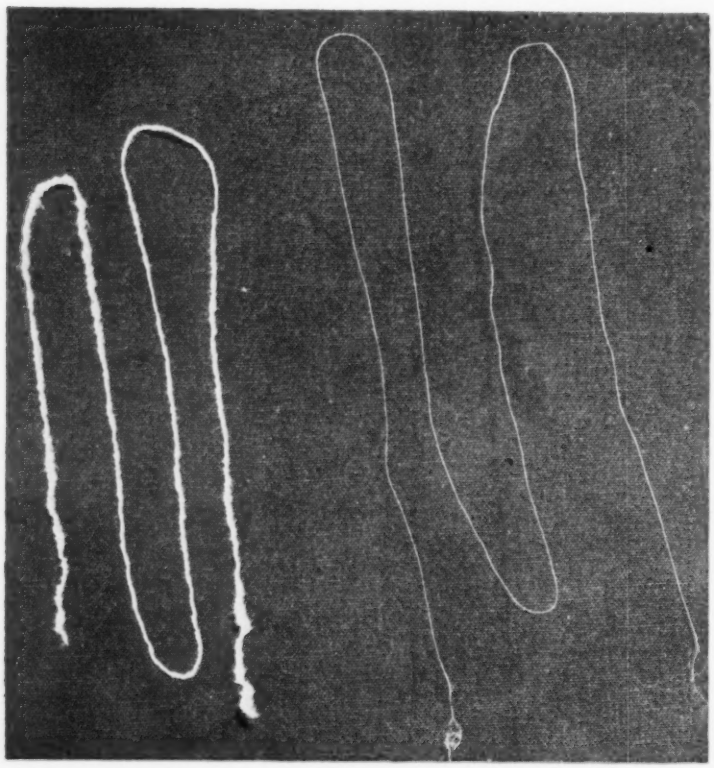
amount of tension to a minimum for best results. This can be done without inviting any unusual difficulties in leg and foot knitting on any type of seamless machine, broad rib included.

In addition to knitting Helanca nylon with a minimum of tension, I suggest that the fabric be knitted loosely, especially when double ends of Helanca are used on coarse gauge machines. Loose knitting and minimum tension help in producing good Helanca socks. Beginners on Helanca should not change any adjustments on machines which were running combed cotton or mercerized yarn. First, knit a sock with all settings as they were except to reduce tension to a minimum. After full contraction if the fabric does not seem to have quite enough stretch, loosening the stitches will help.



CONE OF HELANCA (right) resembles cone of regular filament nylon (left). When viewed at a distance the two are almost indistinguishable. Note enlarged portion of Helanca which is relaxed with no tension.

HELANCA nylon yarn appears at left. Right, regular 15 denier filament nylon.



Tension. Some one will say we must have sufficient tension for heel and toe knitting. How is tension controlled if we run the yarn straight through in order to avoid yarn changes? The answer is: Develop mechanical means to put necessary tension on yarn only while heel and toe are being knitted and let the yarn run free during leg and foot knitting operations. Such devices can be made at very little cost for either plain single feed or multiple feed broad rib machines.

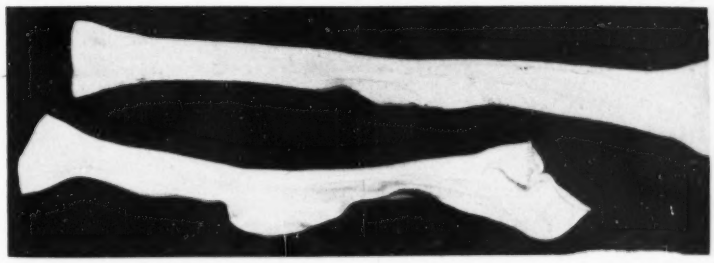
Helanca nylon may cause more damage to needles under certain circumstances than cotton or wool yarns. On the other hand. Helanca yarn is clean and gives off little or no lint or foreign matter to clog up needles or sinker slots. Make sure all yarn guides and feed finger holes are free from burrs or raw edges of any kind.

Snag Factor. Among other things it will be found that Helanca nylon has a tendency to hang or drag on any and every rough place with which it comes in contact, not only while actual knitting is being done but after the hose are taken from the machine. Wrist watch bands, finger rings, hang nails, rough sizing boards, rough work tables, transport trucks, and storage bins, from the knitting room to the finishing department, all provide places where goods may hang or snag. One operator stated that these socks actually look for places to hang on, so it is necessary to "slick the place up" from the knitting room on through to the shipping room.

Knitting Different Sizes. As this

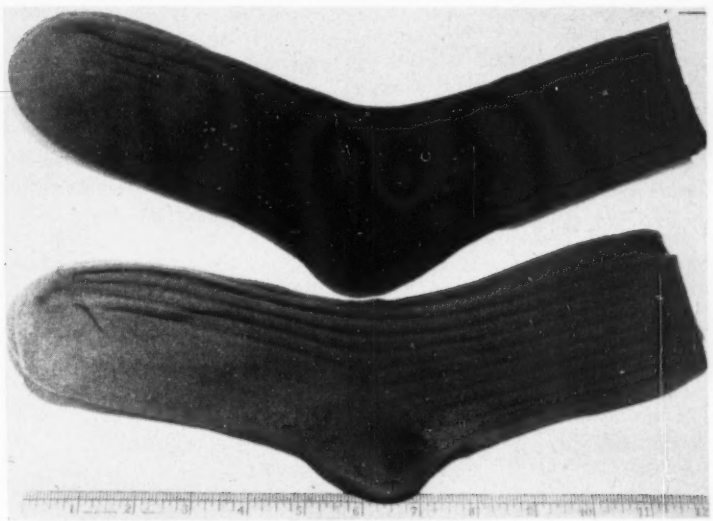
is written, the bulk of production made with Helanca nylon is men's short hose and misses' and children's anklets. It has been said that some mills make one size, some two, others three. When two or three sizes are made, be sure that additional length in leg and foot is made by increasing the number of knitted courses—not by loosening the stitches. See that the respective machines knit the same number of courses per inch and that hose are of same length as they come from respective machines and also after the fabric has contracted.

Changes in humidity and temperature have considerable effect on knitting operations, and apparently sudden humidity changes have a greater effect than sudden changes in temperature. Any given size right out of a machine may be up to three times the overall finished length. In other words, you may need a size 12 sizing board to size a 9 sock. And to make things interesting, some days the socks will contract fully within two hours after knitting; then suddenly three days and nights may be required for complete contraction in the grey. Despite all these oddities Helanca yarn runs well and knits uniform fabric, once the machines are set up and adjusted to a given standard.



GREY HELANCA SOCKS show stretch characteristics. Sock at top is almost twice as long as relaxed sock shown at bottom. Sock at top has been off of knitting machine for several hours but has not completely relaxed.

FINISHED HELANCA SOCKS in medium size. Changes in humidity and temperature have considerable effect on knitting operations.



Looper Line. In view of the amount of contraction after knitting, there has been some difference of opinion among mills regarding whether to loop the goods immediately after knitting or wait until full contraction has taken place. I believe it is best to loop the goods after full contraction has occurred. Since the time required for full contraction varies considerably, it would be difficult to loop Helanca hose if little or no contraction has occurred when the goods reach the looper. Also, when the goods are permitted to contract fully, the looper always has the same kind of looper lines to follow.

Some experimenting has been done by making the looper lines and part of the looper margins or finger holds out of different kinds of yarn (spun nylon, for example). This may simplify looping if the substitute yarn will blend with Helanca when it is dyed. Also, some of the necessary yarn changes may invite considerable waste and seconds which could mean more loss in knitting (production included) than was gained by attempting to simplify the looping operations.

Helanca presents several problems, and some of these begin long after knitting, in such operations as preboarding, dyeing, and boarding. My work with Helanca has for the most part been in grey operations. We should welcome any comments regarding finishing procedures for Helanca goods. Perhaps some one well versed along this line will be good enough to supply some facts and figures.

Much has been said regarding the wearing quality and perfect fitting of hose made of Helanca. Some of the claims are true, but many erroneous ideas have been founded about this yarn, and such ideas may do more harm than good. I have seen an advertisement which states that "stretch socks" made of nylon will fit any size foot perfectly from 9 to 13. These socks may fit one size foot perfectly to be sure, but every size above or below the perfect fit would get a little further away from being a good fitting sock. Another advertisement states that father, mother, and six-year-old son wear the same socks and they fit each member of this family perfectly. Such statements may be somewhat harmful to the market for Helanca, in the final analysis.

Quality . . .

This mill maintains a high level of quality by stimulating employee interest in product and pride of workmanship.

lest they forget

THE FIFTY-TWO slogans exhorting quality arrayed in the photo below are some of the prize winners among 1500 entries in a successful, vigorous contest held at the Ashton, Rhode Island, plant of Owens-Corning Fiberglas Corporation. Practically every employee participated. Prize winning slogans were attractively printed and posted in vantage spots throughout the mill. The name of the winner was printed below each slogan along with the department represented.

It has been established that 85 per cent of poor quality work produced is due to the human element. For this reason, the only remedy for low quality is to induce active participation of all employees in quality improvement programs. A high level of quality can be maintained by stimulating interest in product and pride of workmanship.

How to do it? Plan aggressive campaigns which reach right down to the emotional concern of each wage earner, appealing to job preservation, competitive spirit, pride and dignity of the operator, incentives, and rewards. The slogan contest is a typical example of the technique which would combine these emotional influences so as to encourage employees into voluntary cooperation.

That's just the beginning. Lest they forget, quality must be emphasized continuously. Quality improvement programs should be extended over reasonable periods of time, in some instances indefinitely until quality consciousness becomes an unconscious reflex.

Other types of contests can be initiated: the best Limerick, Suggestion Box awards, Popular Vote Election of the most quality conscious employee. Using the technique of It Pays To Advertise, posters, displays, outdoor signs, exhibits, showcases, and similar "point-of-sale" appeals are saturated throughout the mill and plant grounds — even going to employee outings or picnics where they might register.

Ashton's quality program, which lasted six months, ended with a movie in technicolor showing each of the production operations in sequence. The movie oriented employees with the entire process, acquainting everyone with his fellow employees' responsibilities.

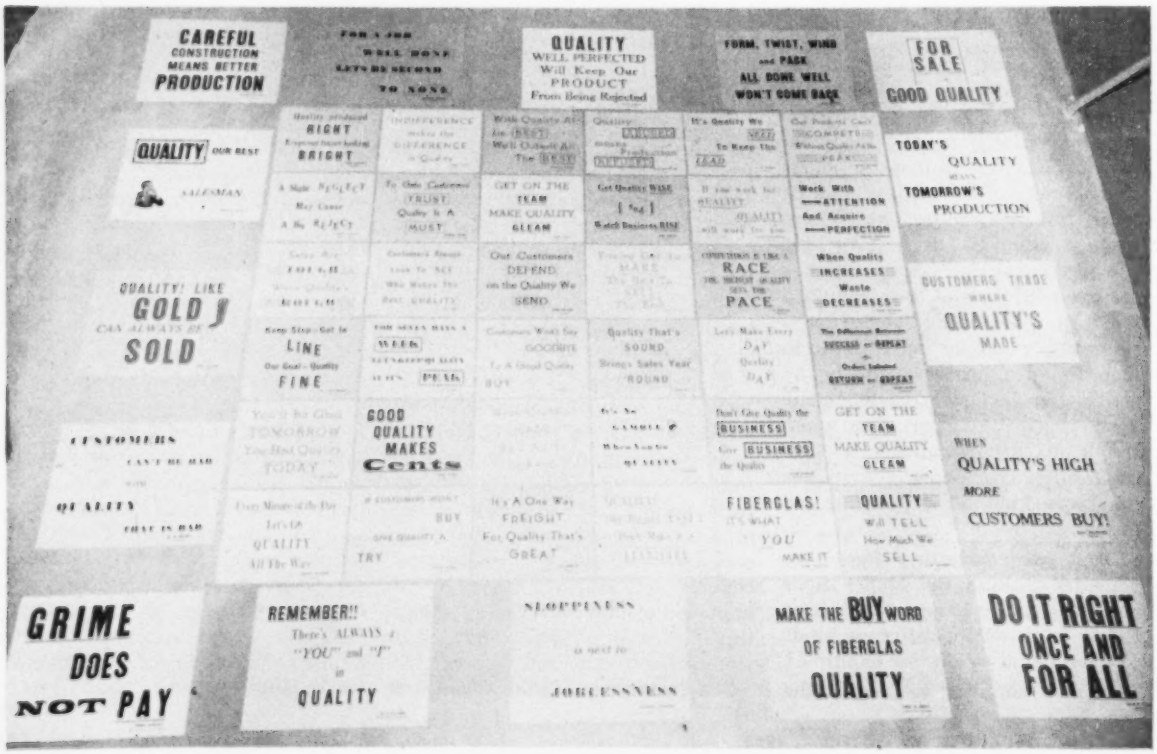
Quality bulletin boards in each department were used to keep employees posted of complaints concerning their phase of operation. When letters of commendation are received, these too are publicized throughout the plant.

Employees are urged to use the suggestion system for recommending improvements which would lead to quality [Editor's Note: officials of the plant are proud to state that no employee has ever submitted a derogatory remark].

How the Ashton program was handled can be seen in the gallery of photos on the opposite page.

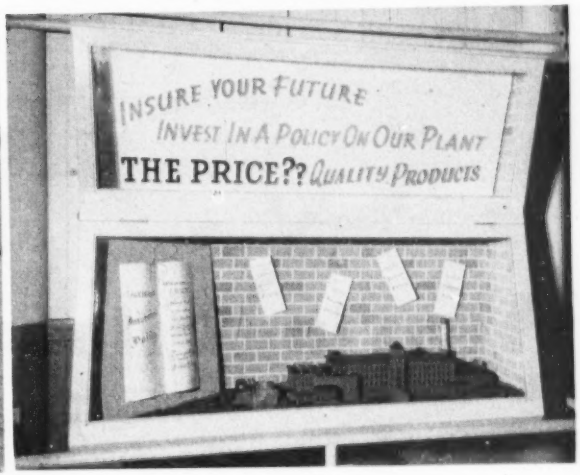
By Wilbur W. Kinney
Owens-Corning Fiberglas Corp.

EXCLUSIVE

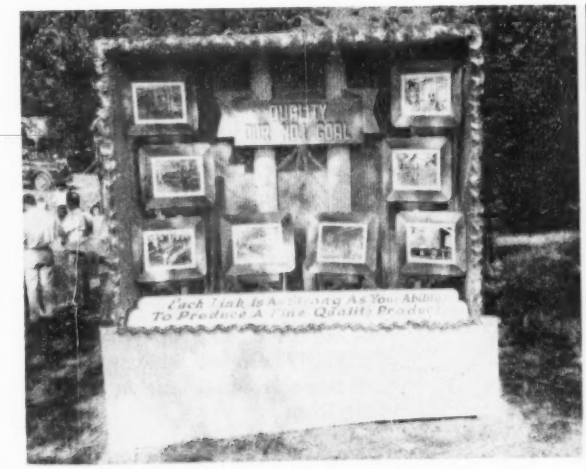

CAREFUL CONSTRUCTION MEANS BETTER PRODUCTION
QUALITY WELL PERFECTED Will Keep Our PRODUCT From Being Rejected
FORM, TWIST, WIND and PACK ALL DONE WELL WON'T COME BACK
FOR SALE GOOD QUALITY
QUALITY OUR BEST
RIGHT BRIGHT
TODAY'S QUALITY TOMORROW'S PRODUCTION
GET ON THE TEAM MAKE QUALITY GLEAM
Work With ATTENTION And Acquire PERFECTION
QUALITY! LIKE GOLD CAN ALWAYS BE SOLD
Our Customers DEFEND on the Quality We SEND
CUSTOMERS TRADE WHERE QUALITY'S MADE
LINE FINE
GOOD QUALITY MAKES Cents
When Quality INCREASES Waste DECREASES
CUSTOMERS
QUALITY
GET ON THE TEAM MAKE QUALITY GLEAM
WHEN QUALITY'S HIGH MORE CUSTOMERS BUY!
FIBERGLAS! IT'S WHAT YOU MAKE IT
QUALITY WILL TELL How Much We SELL
GRIME DOES NOT PAY
REMEMBER!! There's ALWAYS a "YOU" and "I" in QUALITY
NEGLIGENCE is next to JOBLESSNESS
MAKE THE BUY WORD OF FIBERGLAS QUALITY
DO IT RIGHT ONCE AND FOR ALL

Billboards . . .

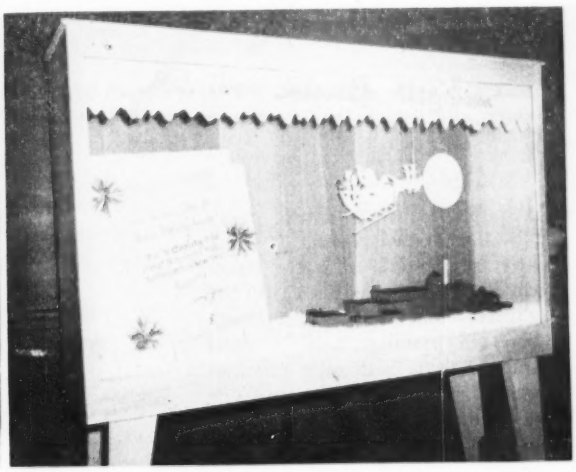
Corridor Displays . . .



Outings . . .

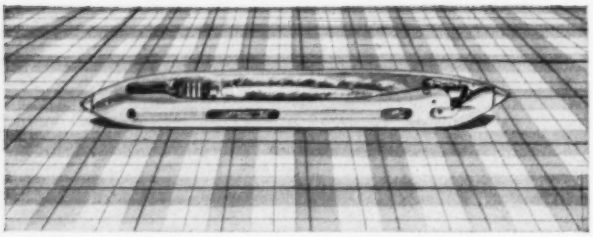


Showcases . . .



Posters . . .

Contests . . .



Part 5 (Conclusion)

The first four articles of this series appeared in the May, June, July, and August issues respectively. They gave the causes and remedies for filling defects. Warp defects are dealt with in this final article.

By GEORGE WILLIAMS

EXCLUSIVE

Weaving Filament Synthetics

(emphasis on fine denier)

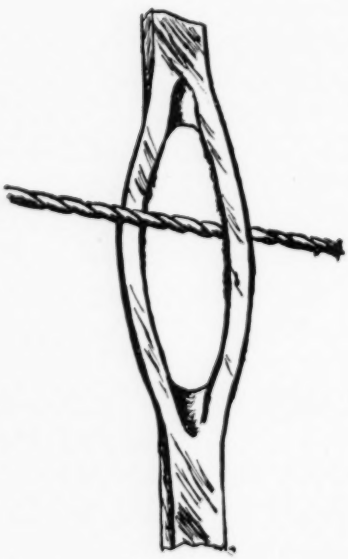
Defects: Causes and Remedies

Broken Ends. *This is a cloth defect resulting from a broken warp end which leaves an open break in the cloth warpwise.*

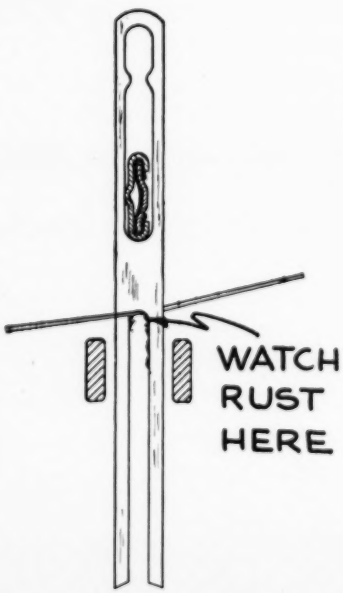
1. Bad shuttles cause many broken warp ends. If there are rough spots or if the shuttle point is loose or dull, the shuttle will catch and break ends in picking. Also, a good shuttle that is thrown crooked because of the loom being out of line or the picker being in poor condition, will break warp ends.

2. A rough or rusty reed or rough heddle eyes will break warp ends. Many rough reeds are the result of too close a setting of the temples or loose bolts or pins in the shuttle, which cut or dent the reed. Reeds should be cleaned with a good metal cleaner at every third cut mark.

3. Small flakes of size hanging to heddles will break warp ends. Usually, the weaver or loom fixer will look for trouble on the eye of the heddle through which the broken end was threaded. Actually, the difficulty is more likely to be found on one of the heddle eyes on either side of the broken end or on one of the adjacent harnesses.

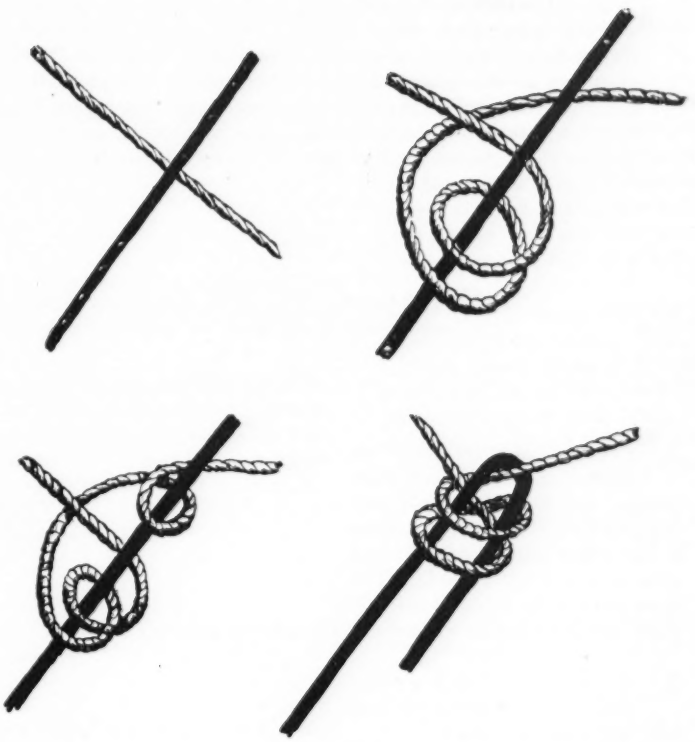


4. Rough stop motion drop wires break ends. Even drop wires in good condition will cut warp ends if they are set too close to the harnesses or are set too high or too low so that there is high tension on the warp. It is also important to see that the drop wires are properly aligned side to side so there is equal tension across the loom.

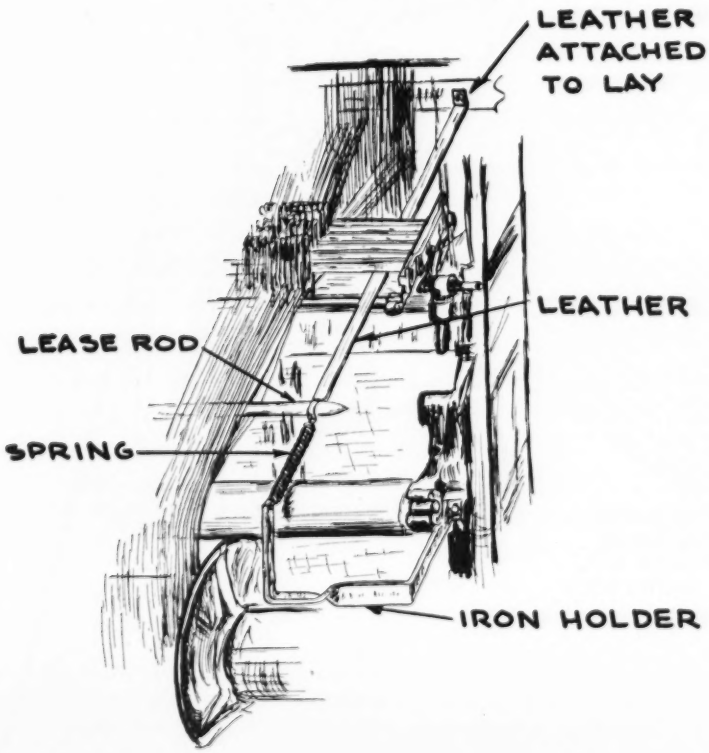


5. Proper warp tension is necessary if broken ends are to be avoided. If there is too much tension, harness cords will be stretched and ends frequently broken. If there is too little tension and the ends are slack, they may drop in front of the shuttle and be broken.

6. Rough handling or rough or rusty equipment in slashing or warping can cause broken warp ends. Ends may be badly damaged but not quite broken in warp preparation, and then break as soon as tension is applied in weaving. Also, if warper tenders or others dealing with warp preparation do not know how to tie a good, double weavers knot, the weaver is going to have trouble with broken ends which are actually ends that have been tied and then the knots have slipped.



7. If two different types of yarns are in the same warp, there is considerable danger of increased broken ends. One yarn may have a tendency to stretch more than the other and there will be unequal tension on the warp beam. The ends will roll over one another and one end will be held beneath several others. They split apart as they go through the drop wires of the stop motion, but in the process, a large number of ends may break. When this condition is bad, special arrangements must be made to take a lease behind the drop wires and vibrate or oscillate the lease rod to separate the yarns. However, this is an emergency measure, for in a well run mill warping is done in such a way that ends do not stick together except in rare instances.



8. If the harnesses are timed too early or too late in relation to the pick, ends forming the shed will get in the way of the shuttle either at the start or finish of the pick. This means more broken ends in the selvage.

9. Most warp end breakage occurs at the edges of the cloth because the reed saws against the selvage more than at other points. Temples must be adjusted to hold the cloth out

to its full width so this rubbing will be minimized. Most loom fixers do not pay close enough attention to the proper adjustment of temples. Regardless of the type of temple used, it should be carefully tested before being installed on a loom. The rollers should be aligned in the casing so they turn freely and have equal clearance all around. Sometimes this means filing the case mountings until clearance is correct. When tested, the cloth should move through the temples easily when moving in a direction which will turn the rollers, but the cloth should be held firmly when pulled against the rollers.

Creases. *The cloth folds over and is pressed so that a crease is made that is difficult or impossible to remove in finishing.*

1. Creases are common on light constructions of plain weave nylon, but almost any construction of fabric will crease if the cause is sufficient. A bad groove or a large bruised spot or dent on a take-up roll will almost always start a crease.

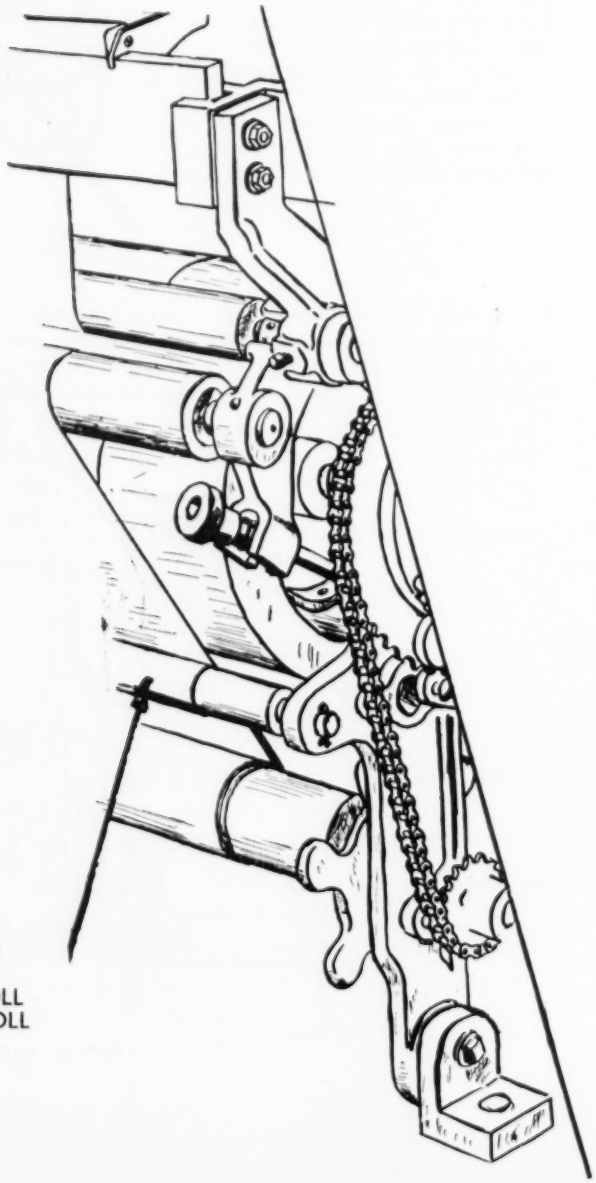
2. A loose covering on a pressure roll or waste on the roll will start a crease.

3. If the friction on the take-up is too light so that it jumps instead of turning smoothly, a crease is likely to be started.

4. Any puckering or variation in tension from one side of the cloth roll to the other will start a crease. Cloth should be started evenly and smoothly. Any projecting splinters or broken spots on the cloth roll or any out of roundness will start a crease.

5. If there is any notch or break in the breast beam, this will start an overlapping of the cloth and cause a crease.

6. Creasing can be reduced if a heavy piece of paper or a thin plastic sheet is used as a shield and guide between the spreader roll and the cloth roll. It should be wrapped around the spreader roll and then carried down with the cloth until it goes about ¾ the way around the cloth roll. This guide will tend to straighten any creases formed ahead of the cloth roll.



HEAVY PAPER GUIDE FROM SPREADER ROLL TO CLOTH ROLL

Dirty Knots. *These are dark spots in the cloth resulting from dirt or grease on knots. Very hard to remove these spots in finishing.*

1. Just as in the case of dirty filling, most dirty knots are from dirty hands or dirty knotters. Knots will pick up dirt from guides, reeds, heddles, or drop wires.

Mis-reed. *This shows up as a heavy streak in the cloth. It is the result of an end being drawn through the wrong dent of the reed.*

1. The usual cause is human error. Either the ends are drawn-in wrong by the entering hand or the weaver draws through the wrong dent after an end-down.

2. An infrequent but possible cause is a broken end which wraps around a knot on an adjacent end and is carried through the wrong dent with it.

Floats. *Warp or filling ends are not woven as designed but skip over without being interlaced.*

1. If one warp end hangs or sticks to another one which goes through a different harness, the stuck end will cause a float by failing to follow its harness. Any piece of waste or foreign matter will hold one end to another. Sometimes a stripback on one end will twist several filaments around an adjacent end and tie the two together. Other items of foreign matter which tie two ends together are: splinters from harness, harness hooks which have fallen into the warp, fluff balls behind the reed, broken heddles, and long knots.

2. Floats are more common in high twist yarns. This is because these yarns will kink if allowed to go the least bit slack. The kinks will hang on adjacent ends, and the two will move together in forming a shed.

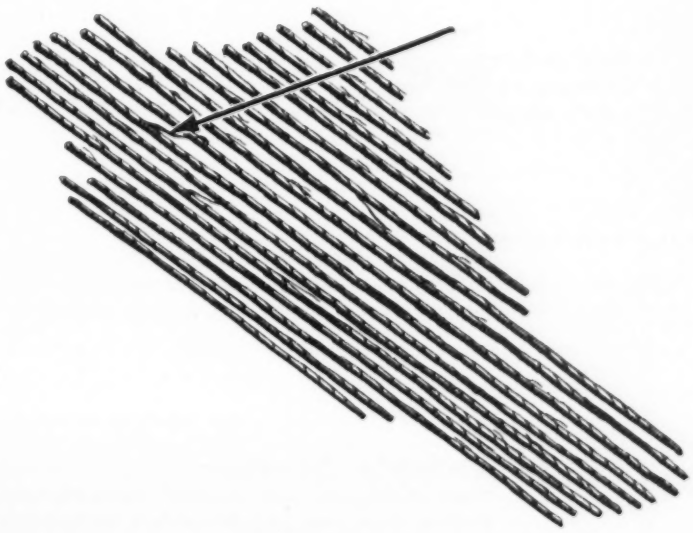
3. Any slack end will hang on another end close by and cause a float.

4. Stripbacks should be avoided because they are one of the principal causes of floats. Guard against rough rollers or guides in warp preparation and rough or rusty reeds, heddles, or drop wires.

Double Ends. *These cause dark or heavy streaks warpwise in the cloth because of two or more ends coming together and running as one.*

1. Generally, a human error is behind all double ends. Beamer operators, or operators of tying-in machines, or even the weaver may be guilty of tying a loose end to another end so they both go through the same heddle eye and weave as one. Do not, however, blame it on the slasher operators. It is impossible for them to be guilty. If they tie a loose end to another end, these ends will be broken apart in going through the drop wires, and because of the direction in which the warp is running, no double ends could be made.

2. On rare occasions a double end can be made without a human error. When combination or ply yarns are being run, it is possible for one of the plys to break and twist around a nearby end. This may cause a double end in the woven cloth and a thin streak nearby.



Loose Ends. *One or more ends are loosely woven into the cloth so that they appear loopy or heavy.*

1. A loose end is one on which there is not enough tension. This is common for ends which run out in the warp and have to be supplemented with yarn from a spool. When yarn from a spool is tied in, it should be run around the warp beam and be threaded through the loom. It is not enough to run it only through a drop wire or around the whip roll. Unless the end goes around the warp beam it is impossible to hold proper tension and avoid loose ends.

2. If a heddle eye is broken, the end will run loose.

3. Certain styles of selvages develop a large number of loose ends. This can best be avoided by running more ends per dent in the selvages to tighten them.

4. Warp beams with crooked heads will cause loose ends in the selvage. As the yarn is wound onto the beam, it will pile up higher in some spots near the head than in others. These high places represent a greater amount of yarn, and after running on the loom for a while, this extra length will show up as loose ends in the selvage. This condition is overcome by bending a piece of leader wire and fastening it to the frame of the loom so that it will hold these ends tight. Of course, the best solution is to avoid using beams with bent heads.

5. If there are occasional slack ends all across the warp, it is likely the trouble can be traced to the warpers. Possibly a stop motion on the warper is not working and lets ends run slack. Operators may be tying ends in so they do not have as much tension as they should.

Warp Streaks. *Open streaks in the cloth where warp ends are spread apart.*

1. Most warp streaks are the result of bad reeds. If the dents are bent, the ends will be separated too far and the weave will be streaky instead of compact.

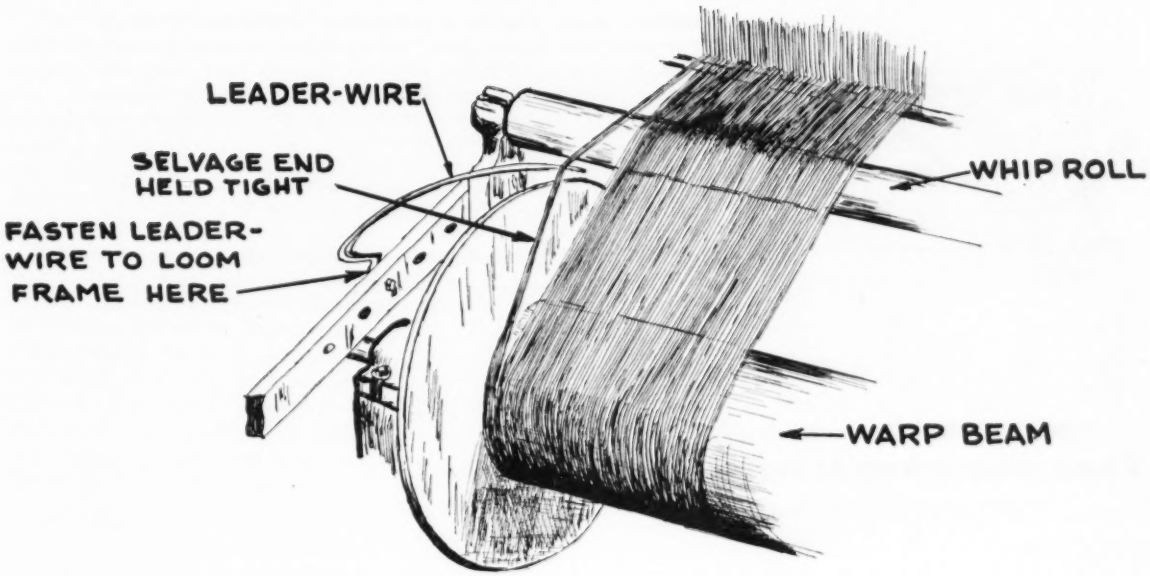
2. Heddle hooks which hold the heddle ribs to the harness frame can be twisted so that the ends are not properly spaced and thereby cause warp streaks.

3. Warp streaks can also be caused by variation of color in dyed yarns or by variation in denier such as would occur if yarns of different lot numbers were mixed. However, most warp streaks are made in weaving, not in yarn manufacture or in dyeing. Always check reeds and harnesses before complaining to the yarn manufacturer or blaming the streaks on the dyer.

Split Ends. *One end of a ply yarn splits or separates, leaving a light streak in the cloth.* *(See Broken Ends, page 160.)*

Warp Stripback. *This is about the same as a split end. Usually there is a slub on one end of a stripback.* *(See Broken Ends, page 160.)*

Temple Marks. *Light and heavy marks on or near the selvage, caused by tight or incorrectly adjusted temples.* *(See Item 9, Broken Ends, page 161, for correct method of adjusting temples.)*



Tight Ends. *A light, streaky appearance in the cloth as a result of too much tension on one or more warp ends.*

1. If an end wraps around a drop wire or becomes entangled behind the wire, this will add tension and cause a tight end.

2. Most tight-end defects are the result of some error in warp yarn preparation. Different weight packages on warping creels will put more tension on one end than another. If an end breaks in warping or beaming it might run around the beam several times and be tied in short. This will put it under stress when in the loom.

Oil Spots. *Oil or grease gets onto the warp or the woven cloth.*

1. Oil on warp, just as oil on filling or knots, is usually tied in with hands, oily clothing, or careless oiling of machinery. (See Dirty Filling, Part 2)

2. Too much oil on the picker will mean that oil can be transferred to the shuttle and from there to the yarn in the shed.

3. Oil holes on the center stop motion should be guarded to prevent flow of oil onto warp.

Wrong Draw. *A break in pattern design due to an end being drawn through the wrong harness.*

1. Although this is strictly a human error, it can be reduced by using tints with a good color contrast when two different yarns are used in the warp.

2. Not only the entering operator but the weaver may be at fault. After a break the weaver may draw through the wrong heddle eye.

Reprints

of these five articles presenting the causes and remedies for filling and warp defects in weaving fine denier filament synthetic yarns are available in booklet form.

Those interested in obtaining copies should write to The Editors, "Textile Industries," 806 Peachtree St., N. E., Atlanta 5, Georgia.

Editor's Note. *This is a companion article to "Training Program That Works Best," which appeared in this magazine last August by the same author. In that story the author gave his findings and experiences with the following methods of training: vestibule school; segregated, on-the-job; non-segregated, on-the-job; and non-segregated, foreman instructor.*

The last named method, according to the author, required less training time and cost, and was the most satisfactory.

This article outlines methods for getting the new employee on the job, orientation, and describes successful training practices. Pointers are given which help reduce labor turnover.

They stay when started right—

First Impressions Count

LET US, at this point, review the steps in establishing a training program which have now been covered (TI, August 1953, pages 100-106).

Step 1. Set up a weekly cost record, individual progress reports, and a labor turnover report. These can ordinarily be worked up within one week's time.

Step 2. Begin selling the production supervisors on the value of the program. This can be begun at the first foremen's meeting after the records have been prepared and continued at all meetings thereafter.

Step 3. Decide where, when, and by whom the training is to be done. The chances are that this will entail little change in present procedures. Certainly, a reading of the previous article should strengthen the average supervisor's conviction that he can do his own training successfully on the job. The orientation and job training procedures which are fundamental to successful on-the-job training will be discussed fully in Step 4 and Step 5.

Step 4. Orientation. "Lost, 45 Trainees." Some time ago, a mill management, in checking on its labor turnover, found that over a nine-week period, it had lost 45 new employees who had stayed an average of two and one-half weeks.

At 75¢ an hour, this amounted to $75.00 each that these people took away in return for precious little useful work rendered - - - - a total of $375.00 each week. For a year of fifty working weeks, this amounts to $18,750. This does not include cost of hiring, bad work, etc.

Now, whatever the training program costs, this turnover expense cannot be considered an investment. It is money thrown away. The question is, how much of it might be saved?

A large part of the answer lies in the orientation program. And every mill, large or small, has such a program whether it intends to or not. For, after all, orientation is only a word to designate the method used in getting the new employee from the personnel office to the job and adjusted to the job.

The trick is to determine what procedure will be most effective in causing the new person to like the job well enough to want to stay.

EXCLUSIVE

By F. S. Wiggington

What Makes Them Stay? The factors which combine to influence a person's feeling toward his new job fall roughly into five divisions:

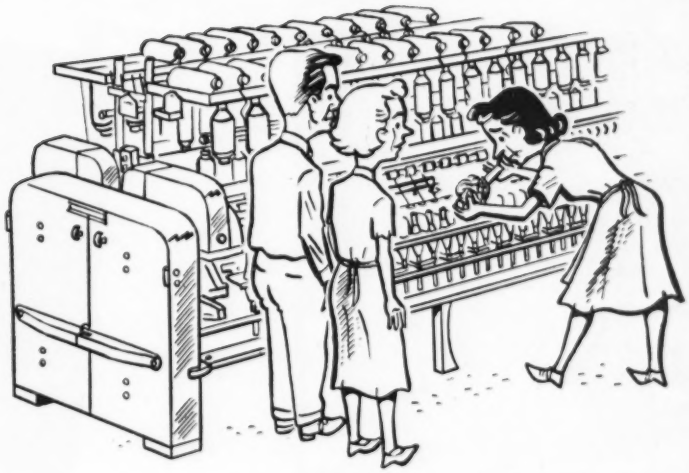
1. The rate of pay.
2. The type of work.
3. The working conditions.
4. His feeling toward his supervisor.
5. His feelings toward his fellow employees.

Which of these act most powerfully on an employee in making a decision to keep the new job or to look around for another one?

Naturally, a person looks for the place offering the best wages. Likewise, he is greatly influenced by the nature of the job and by the conditions under which he works. Nevertheless, the fact remains that people stay on jobs for years even though they think that the pay is too low, they do not care particularly for the type of work that they do, and they regard their working conditions as being less than satisfactory, if they like those they work under and those they work with.

On the other hand, it is very difficult for wages to be high enough, the job good enough, or the working conditions near enough ideal to hold permanently a person who is unhappy about (1) his relations with his supervisor, and (2) his relations with his fellow employees.

These two factors are certainly among the most powerful of those which influence a new employee to remain or leave. Fortunately, they are also the ones over which the supervisor has the greatest control. And, very important to remember, they make their greatest impact on the new employee when he first reports to work.



"Don't place a new employee with an operative whose production is low."

Four Essential Steps. In addition to the regular personnel office procedures, the mill management has four obligations in placing the new employee on the job (assuming that the overseer will train the applicant, with some assistance from experienced personnel; this is the successful method described).

1. Seeing The Job. The prospective employee should, by all means, see the job before being employed. Otherwise, he cannot possibly know whether or not it is the type of work desired. How many superintendents, overseers, or secondhands would accept a position in a mill that they had never seen without being told the exact nature of their duties?

In many cases the applicant does not have the remotest idea what a textile plant is like. The mill will save money and trouble if those who dislike the noise, the heat, and the lint are eliminated before being employed instead of after having drawn two or three weeks' wages.

It is strongly suggested that the applicant be sent to the overseer as soon as the personnel director has made his decision. The overseer can talk with the prospective employee and either reject him or, if he feels that he is the person for the place that he has open, he can show him the job. This overseer's interview should not be a hurried affair. The candidate should be allowed to visit around over the room until he gets the feel of the place. He should meet an old employee or two and be encouraged to ask questions. Finally, he should report back to the overseer and tell him whether or not he wants the job.

Now, what has been accomplished by this procedure? First of all, the overseer has had a hand in selecting his new employee. This will not be just another greenhorn sent over by the personnel office, but a person selected by him.

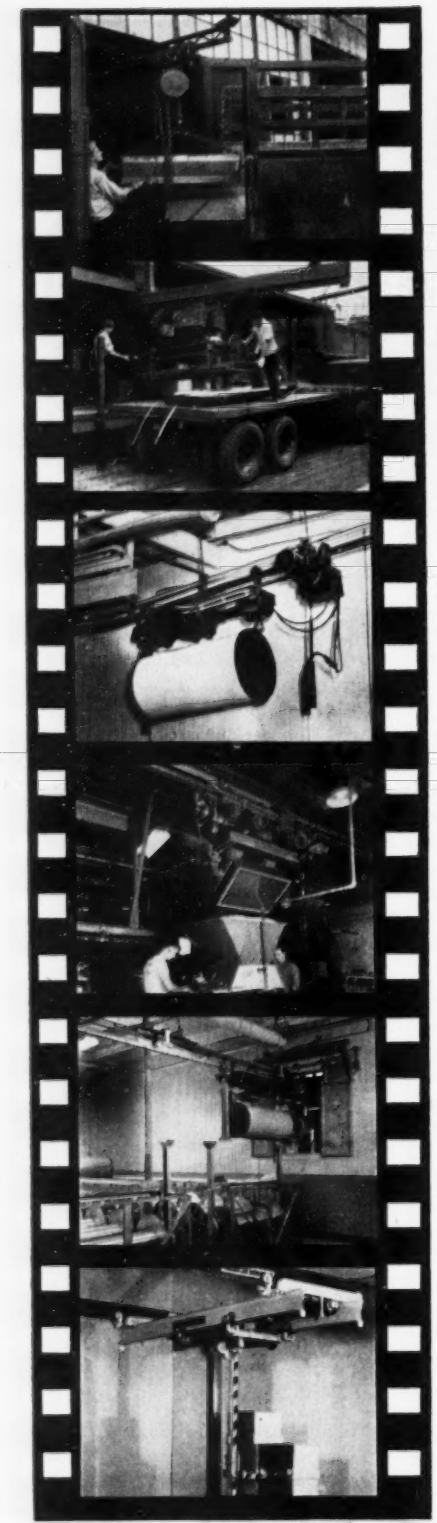
Second, the new employee is already familiar with the job and the place. When he reports for work tonight, he will not be coming to a strange place and an unknown job.

Third, he and the overseer know each other, and a foundation has been laid for a good working relationship.

2. Imparting Essential Information. It is most important that the information which the management considers essential for the new employee to have be given him as soon as he goes on the job. If plant rules forbid visiting in other departments, the time to im-

Some Things a New Employee Should Be Told (Fig. 1.)

Plant Tel. No.	Asking off
Rate of pay	Notice when quitting
Raises	Leave of absence
Premium pay	Change of address
Pay day	Company services available
Deductions	Changing jobs
Holidays	Visiting off job
Vacation	Requesting information
Badge	Grievance procedure
Departments	Promotions
Supervisors	Reporting accidents
Work days	Tampering with counters
Working hours	Company tools
Shifts	Smoking
Starting-stopping signals	Drinking
Eating arrangements	Proper clothing
Location of washrooms	Specific company rules
Attendance	



Quickly removes die blocks from trucks

Saves $30 each truck unloaded

Delivers beams to another building

Automatic delivery of core sand

Automatic transfer of slasher beams

Stacker crane increases storage by 60%

a 16 mm movie that discusses handling problems common to every industry

Before you decide upon any material handling equipment, let us loan you "Up and Over". This 16 mm film shows many installations of American MonoRail overhead handling equipment. You will see hand operated to fully automatic systems—one or more that may be particularly adaptable to your operations. The film is educational, interesting, informative and shows the way to economical, safe and time-saving material handling. Your ticket of admission is only a note to us asking for a print. It will help us if you advise the exact date, as close as possible, when you wish to use it.

THE AMERICAN MONORAIL COMPANY

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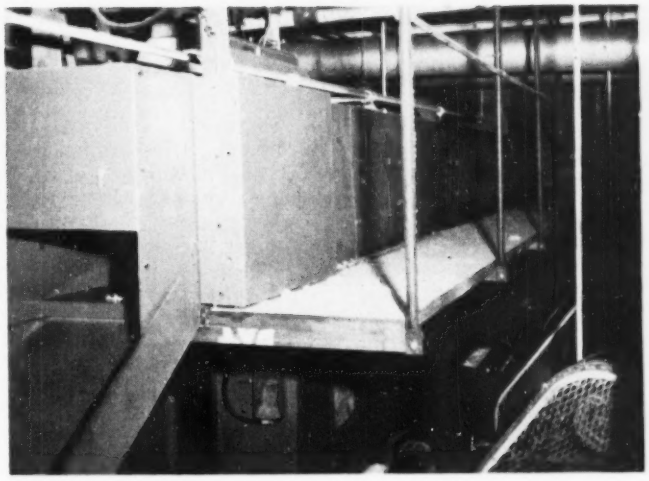
part that information is the first day on the job, not when the employee is found in another department at some later date.

When all the items which an employee should know are listed, their number is surprising. Figure 1 shows a typical list of such items. Almost any management will have others which it wishes to include.

A lecture in the personnel office is often used, particularly in the larger plants, to impart the information to new employees. However, this method is likely to be impractical for the small mill, and it has certain disadvantages wherever there is more than one shift. The new employee is likely to be tired from waiting around several hours. The lecturer becomes extremely weary of repeating the same information daily. If the lecture is given in the morning, the people who are employed in the afternoon must report back to the personnel office on the following morning, thus losing one shift from work. If it is held in the afternoon, those employed early in the day must wait all day or else come back for the lecture. There is some resentment from those so inconvenienced, and attention is likely to be poor.

Another method is to have the foreman go over the list of items during the initial interview. Although this device seems to be better than the other, it takes so much time that the foreman may have difficulty in covering the list properly. Too, this kills any attempt at informality, besides loading the employee with more than he can absorb at one sitting—particularly, at a time when his mind is on the new job.

A much better way appears to be to give the information to the new people in written form. If the mill can put it into the form of an employee manual, this is preferable. But, if not, mimeographed sheets of information may be given out by the foreman to the employee, who can read it while he is waiting to be put on the job, or, later, at home. This allows the supervisor to use his time in getting acquainted when the employee has a much better opportunity to assimilate the information.



Scaffold Over Pickers for Easy Access to Feed System

A suggestion by David Haithcock, card room employee at the White Oak Plant, Cone Mills Corp., Greensboro, N. C., makes access to picker condensers and conveyors easier and reduces accident hazards.

A steel scaffold is suspended alongside the conveyor over the pickers, about five feet below the ceiling. The floor of the scaffold is concrete, poured in sheets and then laid on the frame of the scaffold.

Before the scaffold was installed, fixers used a ladder to get at condensers and conveyors. With the adoption of Mr. Haithcock's suggestion, these parts are more readily accessible, and the danger always present when a ladder is used near moving machinery is eliminated.

Mr. Haithcock received a cash award for his idea under the Cone Suggestion System.

3. The Interview With The Foreman. Let us assume that the prospective employee has been selected by the personnel director, that he has met the overseer, has been shown the job, and that he has now reported to the foreman on the night shift.

This brings us to the most important contact that has been made with him—probably the most important that will be made with him during his entire working career with the company. For in his first interview with the foreman, he forms lasting impressions, good or bad, of the person under whom he will work. So, it is most important that the supervisor be trained to approach this initial interview with certain definite attitudes.

It should be drilled into him at foremen's meetings that:

1. The company has already spent a considerable sum in personal expense incurred in employing the new operative.

2. An additional investment will be made each day that the employee works.

3. The supervisor does not want to train for that job more than one time.

4. The surest way not to have his department cluttered up with trainees is to keep the ones that he trains.

5. No matter how busy he is, the supervisor *does not have time not to take time* for an effective interview. The interview can wait, if necessary, until his regular people are placed.

The supervisor should be made to realize that the new person is

Full-Fashioned Manufacturers Urged to Supplement Operations

Continued profitless operation lies ahead for the average full-fashioned stocking producer unless he seeks relief by supplemental manufacture, George D. McKinney, president of the Independent Association of Stocking Manufacturers warned its members in a recent issue of "Independent Full-Fashioned News and Views."

Mr. McKinney, who also is president of Jeannette Hosiery Mills, Inc., at Elkins Park, Pa., emphasized that he did not have in mind the invasion of the seamless manufacturing field — instead, he was thinking of a knitting operation in which machines capable of making more than one item could be utilized.

The warp knitting field, in Mr. McKinney's opinion, is one to which hosiery manufacturers can profitably divert their manpower, skill, floor space, capital, and ingenuity. To illustrate his point he mentioned only a few of the many different kinds of fabrics that can be made on the Raschel type knitting machine. And this is only one type of warp knitting, he said.

Hosiery manufacturers interested in supplementing their operations with warp knitting are invited to contact Mr. McKinney for detailed information and assistance.

still evaluating both him and the job, wondering if this is the place that he wants, or if he should have looked further, thinking, perhaps, that he will try it for a week or two to see how he likes it. So the foreman should be taught to approach his new employee with the attitude of a salesman with a job to sell. And he should be made to remember that the most powerful single factor influencing his customer is probably the impression made by the foreman himself.

In beginning the interview, the first aim should be to achieve an informal atmosphere — one in which the new employee is encouraged to relax so that the situation develops into a friendly chat.

Objective of Initial Interview. During this initial conversation, the foreman should keep firmly in mind that his objectives are:

1. To obtain as much information about personal background and job experience as is possible without seeming to pry. Most people are glad to talk about themselves if they are given the opportunity.

2. To establish the conviction that the company is a good one to work for, and that the job assigned the employee is a desirable one. This should not be difficult, for textile jobs usually compare favorably with others in the community. If the beginning job has some unpleasant features, the opportunity to advance to a better one should be stressed.

3. To convince the new employee that he can do the work successfully and that he will find the mill a pleasant place to work.

4. To talk in terms of the employee's self-interest. The employee at first is not interested, particularly, in what the company wants or in the foreman's desires. He is interested in his own hopes and ambitions. A windy lecture about what the company and the supervisor expect is usually time wasted or worse. By all means, it should be ascertained whether the employee is clear about his rate of pay and the schedule of raises.

If the foreman keeps in mind exactly what he desires to accomplish and guides the conversation tactfully, this interview need not ordinarily take more than ten or fifteen minutes. If it has been successful, the new employee will be thinking as he leaves the office, *"I am going to like it here. This is a nice fellow to work under."*

4. Placing The Trainee On The Job. In almost any department there are a few operatives whose production is poor. Consequently, in putting a new person to work, there is an immediate temptation to place him with one of these low-production people in order to bolster production. This temptation should be firmly resisted. Such people often are using faulty techniques, and they are much more likely to have a poor attitude toward their job than are the better operatives.

The guiding thought should be to place new people with operatives who will (1) be congenial and friendly, (2) impart a good attitude toward the company and the job, and (3) teach correct job procedures.

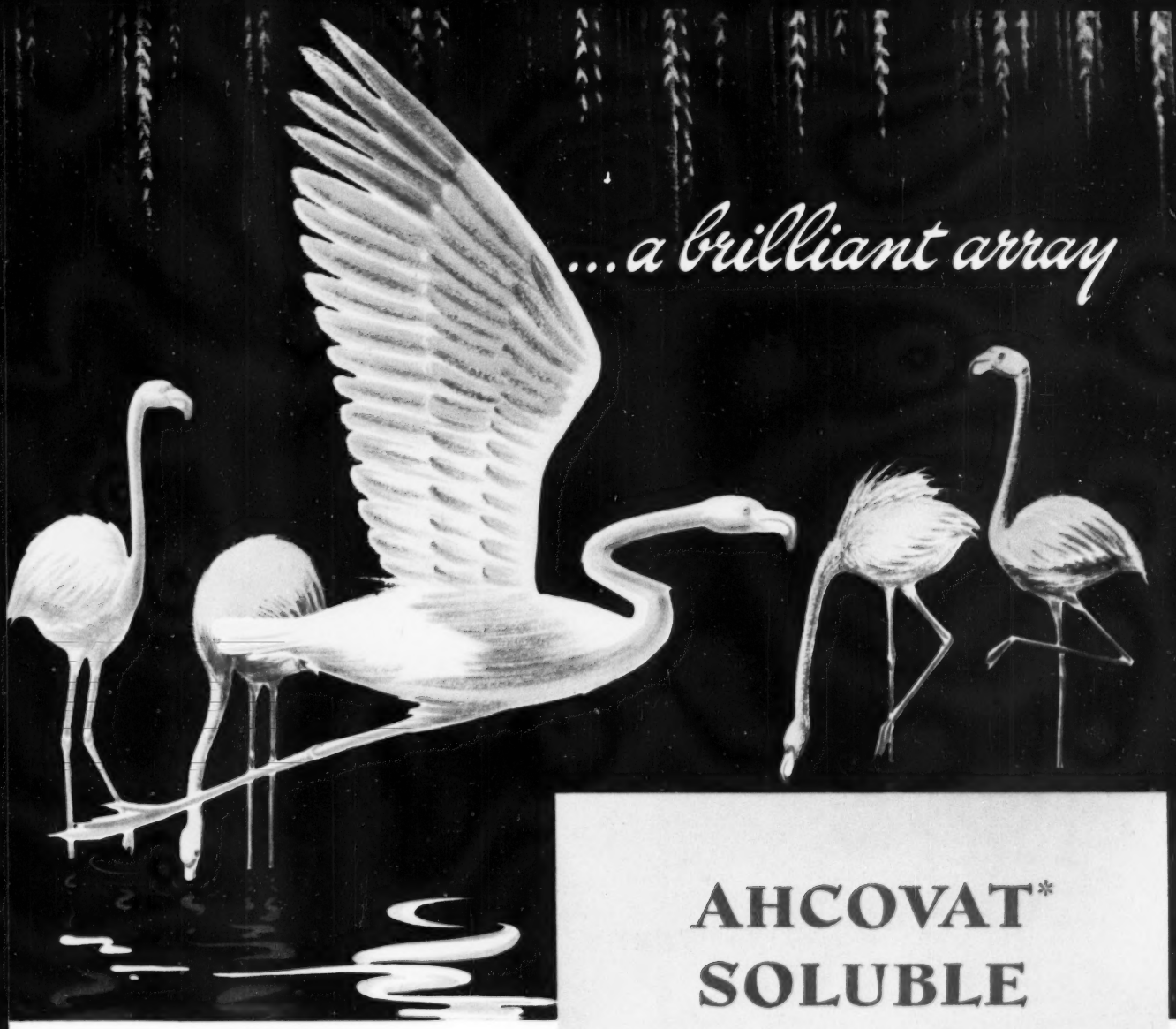
These objectives are far more important than helping some operative's production for a few shifts. The person who meets these specifications will more than likely be one whose age and background are similar to those of the new employee.

During this first shift, the foreman should check the new person's progress from time to time. Two or three of the older employees should be introduced to him and asked to make him feel at home. He should be watched closely for bad techniques and corrected before they become habitual.

In the case of women, particularly, care should be taken to see that they have enough rest time the first few nights. People who have not been accustomed to being on their feet while they work may suffer until they get used to it. Finally, the first shift worked is a good time to remember the precept, "Give them something to go home and boast about."

Step 5. Job Training Methods. The experience of the writer, over a number of years, has been that nothing concerned with the training program is as difficult as getting the production foreman to stress correct methods. Why this should be is not clear. Nevertheless, when it is suggested that a different way of performing an operation is simpler, quicker, and actually requires less work, the resistance is so obvious that it can almost be felt.

It is not difficult to get the average foreman to agree that a certain unnecessary motion in performing a five-second operation will require an extra second. He



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will usually agree pleasantly that this will increase the unit time for performing that operation by 20%, thus decreasing the production of the operative in a given time to 83% of that possible without the excess motion. Having agreed with all of this, he will then probably take his next trainee to an experienced operative, tell the latter to teach the trainee the job, and immediately dismiss the matter from his mind. Weeks later, he will be complaining because the learner still cannot run a full job.

Wrong Method, Wasted Time. The seriousness of using unnecessary motions, or of using one hand only when two could be used, may vary according to the job. For example, many spinner trainees, in threading the guide, instead of pulling the guide down into position with the left hand which is simultaneously slipping the bobbin back on the spindle, will use the right hand; this results in slacking the yarn and bringing the operation to a complete stop.

Such practice not only breaks the rhythm of the procedure, but also results in introducing an additional motion of the right hand which adds about one second to a five- or six-second operation. When the number of ends that a spinner will put up in one shift is considered, the effect is not negligible. When this is run into weeks, months, and years, it becomes apparent just how important it is to eliminate every unnecessary motion.

In the case of the spinner, it is true that much of her time is used in duties other than putting up ends. Thus, the additional work done applies only to one operation among several that she performs.

In the case of the doffer, however, a much larger fraction of his time is used in piecing-up after doffing. This is particularly true of learners who are likely to tear down from fifteen to thirty ends in starting a frame. So, let us consider a fault that probably one-half of the doffer trainees will fall into unless instructed carefully and persistently.

Wasted Time in Doffing. In piecing-up under the bobbin, learners will ordinarily use the right hand to loop the yarn over the bobbin. However, since nearly all are right handed, a large percentage of them, instead of using the left hand, which is free, to grasp the bobbin, will shift the yarn to the left hand, use the right hand to raise and lower the bobbin, then shift the yarn back to the right hand to thread the traveler.

If the traveler is threaded before raising the bobbin, the result is the same since the number of motions used is the same. The effect of thus breaking the rhythm of the operation and adding the additional motion can easily add as much as 50% to the time used in piecing-up. Therefore, it can be seen that the habit will lengthen the training time and will always be a handicap.

The Roving Hauler. Another example of wasted work often seen is that of the roving hauler who stoops to get the roving from the box, straightens up, and raises

"Tax Shelter In Business"

We are living in a tax-motivated economy and, in shaping business policy, tax planning now shares the stage with basic economics, according to New York lawyer William J. Casey, and J. K. Lasser, tax man and accountant.

In a new research study, "Tax Shelter in Business," published by Business Reports, Inc., Roslyn, L. I., New York, (price, $12.50) Messrs. Casey and Lasser gather the main strategies and policies through which a business may hope to hold its own and even to grow in the face of today's tax structure. They cite dozens of methods and scores of instances by which leading businesses and leading businessmen have moved in recent years and are moving today to protect their operations from the tax structure.

The authors show, for example, how hotel man Conrad Hilton used various tax deals to build his $10 million hotel chain; how Roger Stevens, by tailoring his financing to the tax structure, acquired the Empire State Building, and other large properties in Boston and Philadelphia; how the Ford Motor Company used a distributorship to develop a capital position for its executives; how Royal Little built up Textron, Inc., by the use of such tax-exempt institutions as charitable trusts, profit-sharing trusts, Porto Rican corporations, and even local government.

One of the major strategies in building up a business under today's tax structure is to spend tax-deductible dollars in a way which will build up future capital values. In showing how advertising and promotion can work as a tax shelter, the authors spell out how advertising competes for funds with physical expansion and with the dividend claims of stockholders. Similarly, research is evaluated as a tax shelter.

Much business expansion must be accomplished by acquiring additional physical assets. The research study outlines various ways in which plant and equipment can be charged off quickly. It also explains the favorable economics of leasing plant and equipment and selling physical assets and leasing them back. Various other methods of finding tax shelter in financing are analyzed, such as methods of raising venture capital in a form which promises a tax charge-off in the event of loss, and capital gain if the venture is successful. The most advantageous forms of capital structure are evaluated along with methods of organizing and recapitalizing to get the most advantageous capital structures.

A capital structure heavy with debt offers maximum tax protection, and the authors show how life insurance can underpin a business by underwriting future earning power with corporate dollars which would otherwise be heavily taxed when distributed as dividends. The study gives a method of evaluating the use of business funds for insurance.

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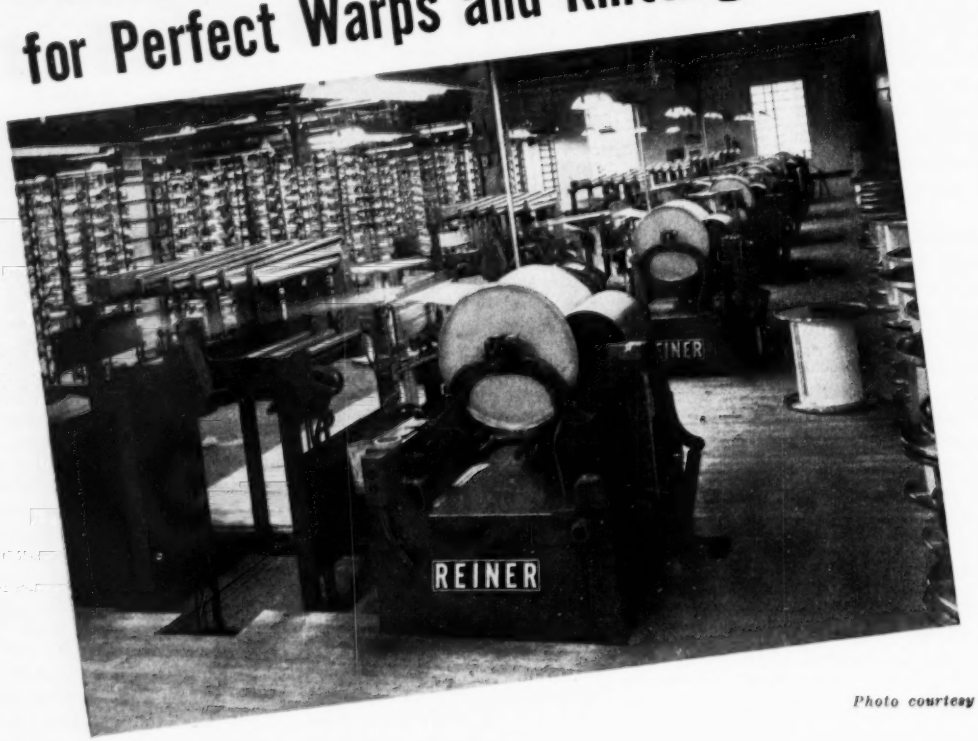

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his arms over his head to place it on top of the spinning frame; yet, he picks up only one bobbin in each hand at a time when he could easily pick up two bobbins in each hand. This would double his production with little more effort; or expressed in another way, would cut his work almost in half to make the same production. Occasionally, a new roving hauler may even be seen going through all of these motions to place only one bobbin at a time on the spinning frame.

In the case of the trainee learning to spool or to fill batteries, faulty techniques may be disastrous, since these jobs consist almost entirely of one set of motions performed over and over.

For example, the learner spooler, in practically every case, will wait until her right hand has placed the bobbin in the pocket and broken the end off before starting her left hand to pick up the next bobbin. This may double the time of the operation. Some trainees will correct this habit themselves within a week or two; others will continue for weeks unless someone takes the time to work with them.

Wrong Procedure in Filling Batteries. Probably, incorrect job methods do more damage in filling batteries than on any other job in the mill. Here, we have a three- to six-second routine performed over and over. One unnecessary motion may lengthen the time per bobbin by 20 to 30 per cent and cut the learner's production accordingly. Not only that, the faults, once acquired, almost never correct themselves; instead, they harden quickly into habits that, in the vast majority of cases, cannot ever be broken.

It is not uncommon to see the new girl leisurely picking up three or four bobbins in her right hand, slipping them under her left arm, then taking them back, one at a time, with her right hand *after* she has completely finished the winding of the filling. Note that in this routine the left hand is never used at all.

In one mill, the training time of battery tenders, long a sore point, was reduced to about one-third of

Instruction For Training Learner Battery Tenders (Fig. 2)

I. See that learner is told where to leave wraps, location of water fountains and rest rooms, arrangements about eating, and is introduced to one or two people who will help her to feel at home.

II. Explain operation of battery, showing how bobbin goes into battery and from battery to shuttle when the bobbin changes.

III. Show operation of filling batteries by letting learner watch while instructor fills several batteries at regular speed.

IV. Now demonstrate and explain operation very slowly, step by step, as outlined below.

V.

Operation	Key Points
1. Grasp filling bobbin.	Use left hand. One bobbin at a time. Butt of bobbin next to thumb.
2. Break loose filling off of butt end.	Use right hand. Break off close (explain why).
3. Unwind yarn from bobbin.	End usually on butt end of bobbin. Do not pinch at middle (explain). Wind off of little end. Length to wind off.
4. Place bobbin in battery.	Use left hand. Place butt end first.
5. Wind filling around thread holder.	Almost same time as Step 4. Use right hand Tight and firm. Slant down one notch.

Begin Step 1 before Step 5 is completed.

VI. After demonstration, have learner perform operation while instructor watches for about thirty minutes or until learner goes through operation smoothly.

VII. Put learner on her own, telling her to feel free to ask questions. Leave for about an hour.

VIII. Check back over work, making any comments or giving any instructions necessary. Also, check carefully to see if learner has developed any unnecessary motions.

IX. Give information on "Points for Learner Battery Tenders" (see Fig. 3) a few points at a time until all are covered. This should not take longer than a week. As these are covered and are being followed by the learner, check them off, or have the learner do so. When all are checked off, have learner initial sheet and return it to weave room office.

X. See that learners have job load increased as fast as possible, letting them know that their wages will be raised as they increase their production. (See progress sheet for schedule of raises.)

Points For Learner Battery Tenders (Fig. 3)

A skilled operator will teach you the job and will help you in every way possible. Please try to follow instructions. Feel free to ask questions. Study the following points and check them off as you understand them.

1. Break the tail off of the lower end of the bobbin.
2. Do not break end off in middle of bobbin so as to leave tail.
3. Be sure to let filling slant down one notch in thread guide.
4. Do not place filling from two bobbins in same thread guide.
5. Never let filling from two bobbins become crossed.
6. Remove all pieces and filling from can and replace them in battery.
7. In running pieces, wind filling to end of bobbin.
8. Do not leave pieces in box. The next shift does not want them either.
9. Wear an apron with pockets, and place waste in pockets. Empty pockets into yellow bags on posts.
10. Keep bobbins off of floor.
11. The filling runs from very fine to very coarse. Mixing these ruins the cloth. (Instructor should show sample of cloth with mixed filling.)
12. To avoid mixing, bobbins and boxes are marked with certain colors. Never mix bobbins marked differently.
13. When bobbins are found mixed, report this to foreman.
14. When filling is found that feels finer or coarser than that in the same box, report it to the foreman even if they are marked the same.
15. To avoid mixing, do not carry bobbins from one loom to another.
16. Do not put dirty or oily filling back in the battery. Leave it in the can.
17. Bad bobbins or badly wound bobbins may cause smashes if placed in batteries. Put them in the cans. (Instructor should show samples of bad bobbins and also of cloth with smash in it.)
18. When filling piles up on battery, remove it. (Instructor should demonstrate.)
19. When battery becomes nearly empty, turn it over to refill. (Instructor should demonstrate.)

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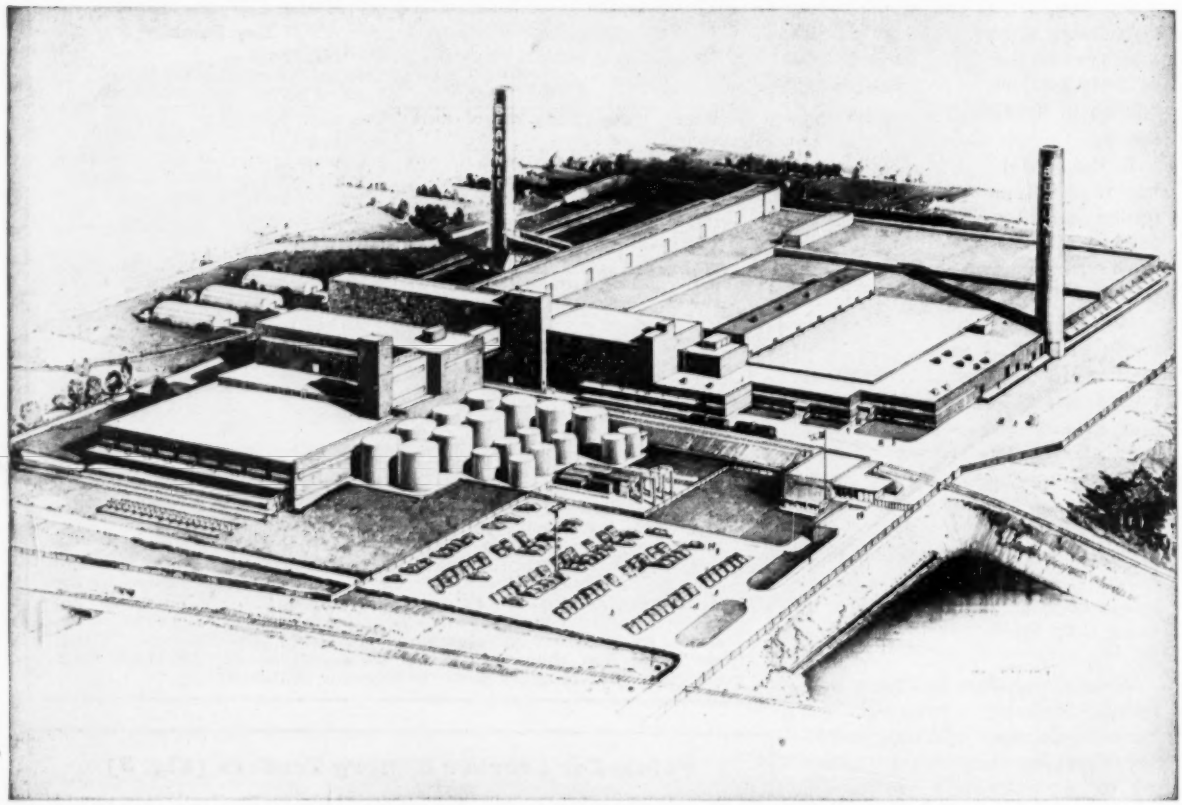

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Job Instruction Training Course Outline (Fig. 4)

(Front)

HOW TO GET READY TO INSTRUCT

Have a Time Table—
how much skill you expect him to have, by what date.
Break Down the Job—
list important steps.
pick out the key points. (Safety is always a key point.)
Have Everything Ready—
the right equipment, materials, and supplies.
Have the Workplace Properly Arranged—
just as the worker will be expected to keep it.

Job Instruction Training
TRAINING WITHIN INDUSTRY
Bureau of Training
War Manpower Commission

KEEP THIS CARD HANDY

(Back)

HOW TO INSTRUCT

Step 1—Prepare the Worker
Put him at ease.
State the job and find out what he already knows about it.
Get him interested in learning job.
Place in correct position.
Step 2—Present the Operation
Tell, show, and illustrate one IMPORTANT STEP at a time.
Stress each KEY POINT.
Instruct clearly, completely, and patiently, but no more than he can master.
Step 3—Try Out Performance
Have him do the job—correct errors.
Have him explain each KEY POINT to you as he does the job again.
Make sure he understands.
Continue until YOU know HE knows.
Step 4—Follow Up
Put him on his own. Designate to whom he goes for help.
Check frequently. Encourage questions.
Taper off extra coaching and close follow-up.
If Worker Hasn't Learned, the Instructor Hasn't Taught

the original period when the overseer, secondhands, and training supervisor got together, agreed upon a uniform method to be taught and enforced, reduced this to writing, and adhered to it. Interestingly enough, the seven production supervisors were able to agree without any argument that the chosen method, which is shown in Figure 2, was the quickest and best. This was used with battery boxes attached to the loom.

It is quite interesting to check this procedure against the instructional outline given in the Job Instruction Training course, popularly known as JIT, which was so widely used during World War II. The outline, as it appeared on the JIT instructor's card, is shown in Figure 4.

If the battery filling routine is analyzed in the light of the first eleven laws of motion economy, which are the ones applying to the use of the parts of the body in performing an operation, it will be found to conform to them about as closely as this job allows. These laws, as commonly stated, are given in Figure 5.

Another group of supervisors might devise a better method. If bobbin buggies are used, the routine offered could be used only at every other loom, and the entire proceeding would need to be analyzed in the light of the changed conditions.

The point is that any group of production supervisors can work out an efficient procedure for teaching a job—one that will be vastly superior to the methods that will ordinarily be picked up by the trainees if they are left to their own devices.

The most important principles to keep in mind are:

1. The elimination of unnecessary motions.

2. The elimination of stops or hesitations which break the rhythm of the operation.

3. Provision for using both hands wherever possible, so that one hand is not idle while the other does the work.

In conclusion, it should be repeated that the degree of success of a training program depends upon the continuing interest shown by top management. If the superintendent goes over the training reports weekly, as he does his production reports, his interest will be reflected in a sustained effort on the part of the production supervisors. If he checks up only occasionally, their interest will inevitably lag.

To the production supervisor, it may be said that few phases of his work will pay as great dividends as will a successful training program.

These dividends will show in:

1. Reduction of departmental costs.

2. Reduction of labor turnover.

3. Respect of superiors in the organization.

4. The lasting friendship of a steadily increasing number of people who will always remember the friendly interest shown them during their first days on the job.

Over a period of years, this last dividend will be found to afford the deepest and richest satisfaction of all.

Laws of Motion Economy (Fig. 5)

1. Both hands should preferably begin their motions simultaneously.

2. Both hands should preferably complete their motions at the same time.

3. Both hands should not be idle at the same instant except during rest periods.

4. Motion of arms should be in opposite and symmetrical directions instead of in same direction, and should be made simultaneously.

5. Hesitation should be analyzed and studied and its cause accounted for and eliminated if possible.

6. Shortest time demonstrated in one part of a study should be used as a mark to attain, and reason for other times required in other parts of study should be known.

7. Number of motions required to do work should be counted; for the best way is almost always a sequence of fewest motions.

8. The best sequence of motions in any one kind of work is useful as suggesting the best sequence in other kinds of work.

9. Every instant where delay occurs suggests advisability of providing some optional work that will permit utilizing the time of delay, if so desired, or of making fatigue study of the interval.

10. Variations of time required for any single motion should be arrayed and causes recorded.

11. Lateness of various parts of the anatomy as compared with other portions, should be recorded.

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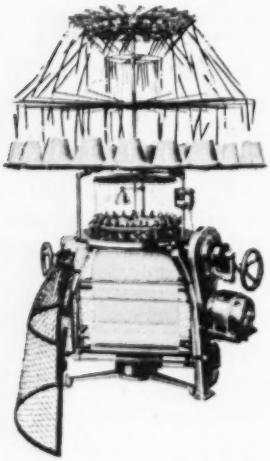

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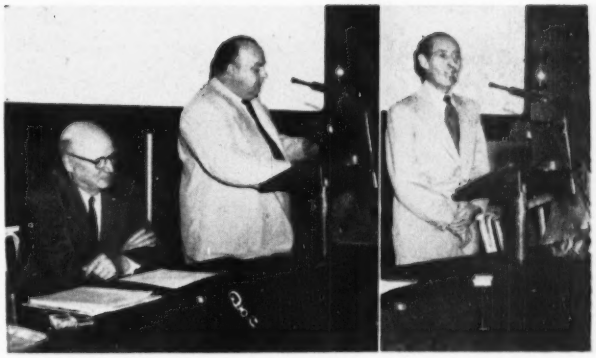
Left to right: SHMA president Durham and speakers Davis and Ladhams.



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Taylor R. Durham, Charlotte, N. C., president and secretary.
R. R. Rice, Virginia Maid Hosiery Mills, Inc., Pulaski, Va., vice-president and chairman of Full-Fashioned Division.
N. M. Ayers, Triangle Hosiery Co., High Point, N. C., vice-president and chairman of Seamless Division.
Fritz Seifart, Hudson Hosiery Co., Charlotte, N. C., treasurer.

Annual meeting in Roanoke finds

Hosiery Men Optimistic

Staff Report

WITH PRODUCTION, sales and shipments of hosiery for the past year at an all-time high, members of the Southern Hosiery Manufacturers' Association met August 27 and 28 at Roanoke, Va., for their 20th annual convention.

The hosiery men predict that the Korean truce will have little effect on their industry since defense purchases are expected to continue at a high level for some time to come; and, in any event, government orders have not played as important a role as they have in many other industries.

The Hosiery South. Taylor R. Durham, president of the association, reported to the membership that about 59 per cent of full-fashioned production and 82 per cent of seamless production were in the South in 1952, compared to 47 per cent and 80 per cent, respectively, in 1946.

Although there is still overproduction in some lines, shipments and inventories are in balance through most of the industry, according to Mr. Durham. During the past year, attrition has eliminated a number of marginal operators in the full-fashioned branch, which should improve the position of the industry as a whole.

Employee Training Methods. Interest at the opening session was concentrated on work simplification and employee training methods. L. C. Davis, Jr., president of Charleston Hosiery Mills, Cleveland, Tenn., listed the three basic principles of work simplification as: (1) Reduce motion, (2) Reduce reach, and (3) Use both hands.

Quoting an example of the application of these principles, Mr. Davis told of an operative whose total "reach" during the boarding operation was reduced from 5 miles to 2 miles daily, when she began to use one hand to pick up a stocking while smoothing another on the form.

Training Learners by Analytical Method. Geoffrey H. Ladhams, personnel consultant of London, England, described his "Analytical Method" of training learners. His method has been in use for some time in England and on the Continent, and is now being successfully applied in this country.

The essential feature of the Analytical Method is that the job to be learned is broken down into a number of separate skills, and these are taught individually before the operation as a whole is attempted. Before practicing on the actual machine, the learner is taught the necessary mu cular, digital, and ocular skills on specially designed apparatus.

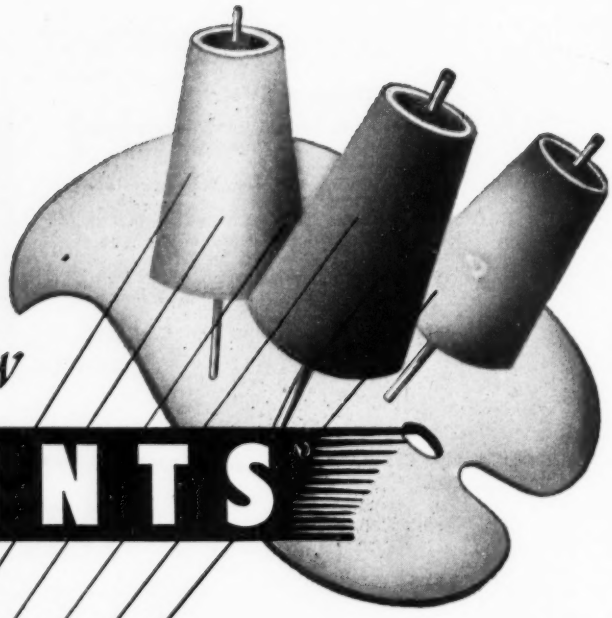
Using Mr. Ladhams' method, skilled loopers have been trained in about 20 weeks, as compared to the usual period of a full year.

Other speakers were C. O. Skorstad, director of organization and education, Credit Union National Association, Madison, Wis., who discussed the organization and functions of an employee credit union; and Rhett Ball, vice-president, Bruce Payne & Associates, Atlanta, Ga., who explained how the outside consultant can help management to effect "a change of pace" in its operations.

Members attending the second session heard Dr. Claudius T. Murchison, economic advisor to the American Cotton Manufacturers Institute, discuss the Washington scene. E. S. Dillard, president of Old Dominion Box Co., Charlotte, N. C., addressed the group on "America Preferred." Silas Lucas, Wilson, N. C., attorney, was the speaker at the banquet which concluded the convention.

New Officers and Directors. Officers elected at this convention were: **R. R. Rice** and **N. M. Ayers,** vice-presidents and chairmen of Full-Fashioned and Seamless Divisions respectively.

New directors: **R. P. Shapard, Jr.,** Spalding Knitting Mills, Griffin, Ga., chairman; **P. W. Baker,** Holeproof Hosiery Co., Marietta, Ga.; **R. M. Holt,** Holt Hosiery Mills, Inc., Burlington, N. C.; **P. G. Menzies,** Southern Hosiery Mills, Inc., Hickory, N. C.; and **J. L. Tarwater,** Roane Hosiery, Inc., Harriman, Tenn.



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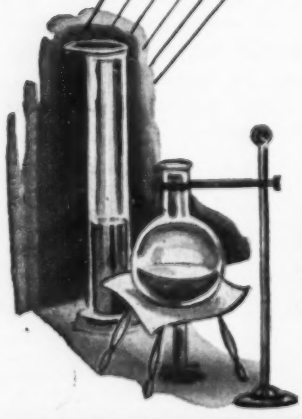

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EXCLUSIVE

Economic Folly vs. Political Wisdom

"Since the practical politician usually regards any activity which furthers his chance of election as the very highest sort of wisdom, it naturally follows that much economic folly must be committed in order for one to be wise politically."

By Ringgold Arden

THE DICTIONARY defines economics as the science which treats of the production and distribution of wealth. With that definition no one seems to take issue.

The dictionary defines politics as the science of civil government. There is much disagreement about the accuracy of this definition, because any practical politician knows better than that, and understands that politics is the science of getting elected and then reelected.

To be elected, it is generally necessary to make many promises of many things to many people, and most of these promises the politician knows can not be kept. Upon his success in keeping promises, or in appearing to keep them, or in promising to keep them if he just has a little more time, lies his chance of reelection. Since the practical politician usually regards any activity which furthers his chance of election as the very highest sort of political wisdom, it naturally follows that much economic folly must be committed in order for one to be wise politically.

Some prominent practitioners of the art of politics got out a brochure a few years ago, during a campaign for the presidency, for the benefit of the politically illiterate, and this brochure defined politics as "The science of who gets what, when, and how." That seems to be a neat, accurate, and descriptive definition, because politics does seem to be more the science of civic plunder than of civil government.

The typical politician is a man totally unfamiliar with the production of wealth. He is perfectly willing to let others grub away in the pursuit of wealth, while he devotes himself entirely to the second half of the definition—he will see to the distribution of wealth. He will provide for the needy, including himself, and will lighten the burden of the man who produces the wealth by relieving him of the responsibility for disposing of it.

It seems that in the entire animal kingdom, human beings are the only creatures requiring the services of politicians to distribute their hard-won substance. The bees tolerate no drones in their hives. The ants are said to look with disfavor on the mooching grasshopper, who comes around at the first signs of frost and offers to take over the formicid warehouses and manage them with the same prudence and efficiency he displayed in his own affairs during the fruitful summer months. The ants are evidently smarter than human beings because they do not hire the grasshoppers to take charge of their economic affairs.

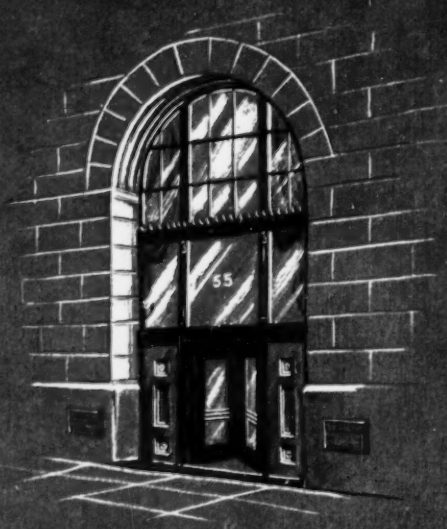
There seems to be nothing that a colony of human beings enjoys more than putting a grasshopper in charge of the distribution of hardly garnered wealth. The politician is well aware of this human weakness, and knows that the most incredible of economic follies will often be welcomed by great numbers of persons as wise and prudent statesmanship.

Other great numbers of persons, like ants and bees, instinctively save up for the future. The beehive may tolerate no drones, but the politician loves drones—there are so many of them and they are so loyal to the politician who sees that they are provided for (with somebody else's provisions, of course).

The science of economics and the science of practical politics are therefore in direct opposition to each other. Actions which are economic lunacy become wise and prudent measures in the eyes of the practicing politician. To the orthodox economist, nothing could be more idiotic than the deliberate depreciation of a nation's money under the delusion that this will create prosperity.

To the politician, however, a nice inflation is one of the wisest moves that can be made in times of economic stress. The politician knows that you don't actually have to *give* somebody something to win his gratitude; you only have to make him *think* you have given it to him.

If a man deliberately paid $50 for a pair of shoes that he should be able to buy for $10, he would be guilty of great economic stupidity, but if a government deliberately pays 50 million dollars for something it should have got



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for 10 million dollars, this is political wisdom. Look at all the people that can be employed to make these things! Look at all the people who can be hired to loaf while they watch the other people make them! Look at the money you put in circulation! Look at all the prosperity you create by making these jobs and giving these people purchasing power!

If a man bought something he didn't want, with money that he didn't have, simply because he thought the storekeeper needed the money and he felt sorry for him, even the kindliest of this man's friends would probably consider him a trifle nutty. When the government buys something it doesn't want, with money it hasn't got, because the politicians in charge of the government feel sorry for people who need the money, that is statesmanship actuated by farsighted wisdom, and almost any one of these statesmen can make up an itemized list of how much of other people's substance he has thrown away, and get reelected on the record.

If a man wishing to buy something should take his savings out of the bank and give himself a promissory note for the amount, spend the money and yet figure that he wasn't out anything because he had his own note for the loan, he would be indulging in a piece of economic idiocy.

The politicians operating our government, however, do exactly this same thing by borrowing the citizen's money and giving him a promissory note for it which he must make good. This is applauded as very shrewd national finance. The citizen has a bond which is just as good as gold if he lives long enough to pay the taxes to redeem it. It takes a clever politician to think up a smart deal like that.

If a corporation appropriates a sum of money for a certain operation, and there is a substantial surplus remaining after the operation is completed, this surplus would be returned to the company's treasury with feelings of great thankfulness. Any other procedure would be economically unsound.

If a group of politicians appropriate a sum of money for carrying out a certain operation, the other politicians charged with the expenditure of the money would consider themselves stark, raving mad if they failed to use every possible effort to spend every cent of the appropriation, and would probably think that they were just

No Simple Prescription for Blending: Quig

There is no simple prescription for the blending of textile fibers. It is impossible to prepare a chart that could spell out for the textile industry, or the consumer, the percentages of fiber in a blend that might give a desired result. The matter of blending fibers is far more complex than the practice of a housewife baking a cake by blending sugar, eggs, flour, baking powder, salt, flavoring, and other ingredients.

Recipes for blending textile fibers will come in time . . . possibly, but for the present, it is necessary to test each fabric construction in a proposed end use to determine its suitability for the specific use in question.

These conclusions were drawn by Dr. J. B. Quig, manager of the Du Pont Company's Textile Research Division, in discussing blends.

"The fabric characteristics or end results desired are very important in the vital decision as to what kind of blend will be created," said Dr. Quig. These normally fall into three classes:

(1) To obtain maximum functionality for some definite property, such as wrinkle resistance, dimensional stability, durability, etc.

(2) To compromise on a specific functional property to effect a combination of desirable properties, such as improving aesthetic properties of handle, drape, surface texture, and novel color effects; suppressing undesirable properties of static, melting of holes, or for economic reasons of making a selling price competitive.

(3) To enhance functionality by use of small percentages, such as the reinforcing of hosiery in the heels and toes.

"Even to approach these purposes," continued Dr. Quig, "there are many factors to be considered.

"For example, nylon behaves differently when blended with acetate in one case and with wool in another. Consequently, it is impossible to 'chart' what nylon will do specifically all along the line in blends. The other fiber or fibers play too big a part in the blend. That holds true in every case. Therefore, the minimum or maximum percentages of the chemical fibers vary greatly with the other fibers in the blend.

"How much of the functional property is desired," Dr. Quig pointed out, "influences the minimum percentages of chemical fibers to be used. How great the durability, how high the resistance to wrinkling are important factors. The percentages are further influenced by the inherent properties of the fibers being combined in the blend. To get resilience approaching a blend of 'Dacron' polyester fiber and wool in a blend of 'Dacron' and rayon, the percentage of 'Dacron' would have to be higher with rayon because rayon does not approach wool in resilience.

"The crux of this whole problem of blends lies in the impact on the consumer," observed Dr. Quig. "The consumer obviously wants the 'perfect' suit — one that never needs cleaning, or pressing, and that will wear forever. There is a considerable disparity between what a blended fabric can technically deliver and what some of the advertising or selling claims would have the consumer believe. Some of these claims arise through misunderstanding, others through unscrupulous tactics of the opportunists in the trade," he added.

"In no case," he continued, "does a so-called correct minimum or even higher percentages of a chemical fiber guarantee performance. There are too many other contributing factors, such as the construction of the fabric, twist of the yarn, ply, and many others including final finishing treatment."

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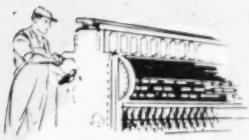

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Breaking-In and Maintaining Eadie Rings

Suggestions for handling, breaking in, and maintenance of Eadie twister rings have been worked out by Universal Winding Co. with the aid of Whitinsville Spinning Ring Co. Highlights from their findings, as published in Universal's "Twists and Winds," are:

Handling. Inside and bottom edges of ring should never be handled unless absolutely necessary — perspiration from hands causes polished metal surfaces to rust. Apply talcum powder to hands before handling rings. Hold by outside rim, not by inside surface and lower edge.

Leave rust-stopping oil applied at factory on rings. Do not use solvents for cleaning. Best way to clean rings is to wipe with oily rag.

Breaking in New Rings. Apply oil generously to inner face of each ring; it can be spread on with brush. Use traveler about six numbers lighter than normal to start. Change traveler every hour for first few hours; every two hours for next four-hour period; and at longer intervals as hours increase. Weight of traveler should be gradually increased a grain or number at a time until traveler weight normally used for particular job is reached. Determine when to increase weight of traveler by feeling tension on yarn.

When traveler of proper weight can be used without showing signs of abnormal wear and inside face of each ring has attained a high polish, rings are broken in thoroughly.

Maintenance. Change travelers systematically. Schedule can best be determined by keeping careful watch for worn travelers and making record of length of time traveler runs before it has to be replaced.

Compressed air can cause broken wicks if used carelessly. Damaged wicks should be replaced immediately.

New rings should also be wiped out often.

Put travelers on with a downward motion — head of traveler should be placed over top edge of ring and then foot pressed into place under bottom edge.

Use balanced style traveler, one that will contact bearing surface of ring evenly to insure good running work. Break or knee of traveler should be high enough to be about 1/16" above the groove. Half round and bevel edged travelers seem preferable since they tend to trap the lubricant under the traveler's advancing edge.

"Bronzing" can be removed in any one of three ways: (1) wipe a mixture made up of 10% flowers of sulphur and 90% oil on face of ring; (2) rub inner face with crocus cloth; (3) return ring to manufacturer for repolishing.

stupid unless they managed to exceed the appropriation and go back for more. If by any incredible miscalculation there should be a surplus, there would be much recrimination and many hard words passed over any such political imbecility.

A private treasury is something to hold money. A public treasury is something to take money out of. Any chump knows that. The politician uses money not as a means of getting something useful done effectively, but as a means of getting someone to vote for him.

It seems that our National Administration has been trying all this year to pay a little more attention to the laws of economics than has been paid for many years, but the laws of economics constantly run head-on into the fact that economic wisdom is frequently political folly, and vice versa. We have lived through 20 years of economic insanity, and people are getting used to it and entirely too many of them have come to feel that the laws of economics are not laws at all, but are just a set of fallible rules laid down long ago by people who didn't know anything about modern methods of creating wealth.

Entirely too many people are firmly of the belief that what would be economic lunacy on the part of an individual, or a small group of individuals, can be wise fiscal policy when applied to a whole nation.

Entirely too many people who know that a man who spends money that he hasn't got for something he doesn't need is heading for trouble, firmly believe that if a whole nation spends money it hasn't got for something it doesn't need, it will get on the road to prosperity.

Entirely too many people are of the opinion that the national debt is a matter of no consequence, because "We owe it to ourselves."

Entirely too many people are not impressed by the fact that each citizen's share of this national debt is $1700, and that when state and local debts are added, each citizen is carrying a burden of debt of about $2000. This means that a typical family of five persons owes $10,000 to the government. If the average American family owed $10,000 anywhere else, the breadwinner of the family would view that debt with great respect and much concern, but because he owes it to the government, in his mind the debt doesn't exist—it is somebody else's debt, not his. He has learned to believe that the more money the government borrows and spends, the better business will be and the better his chance of holding a good job. He does not envision the possibility of a payday when the time comes to reduce a debt instead of increase it.

The politicians almost to a man deplore the high cost of living, and in the next breath favor the things that push the cost of living up—another instance of being in favor of economic folly because it is politically smart to do so.

Probably the most pernicious feature about a period of inflation

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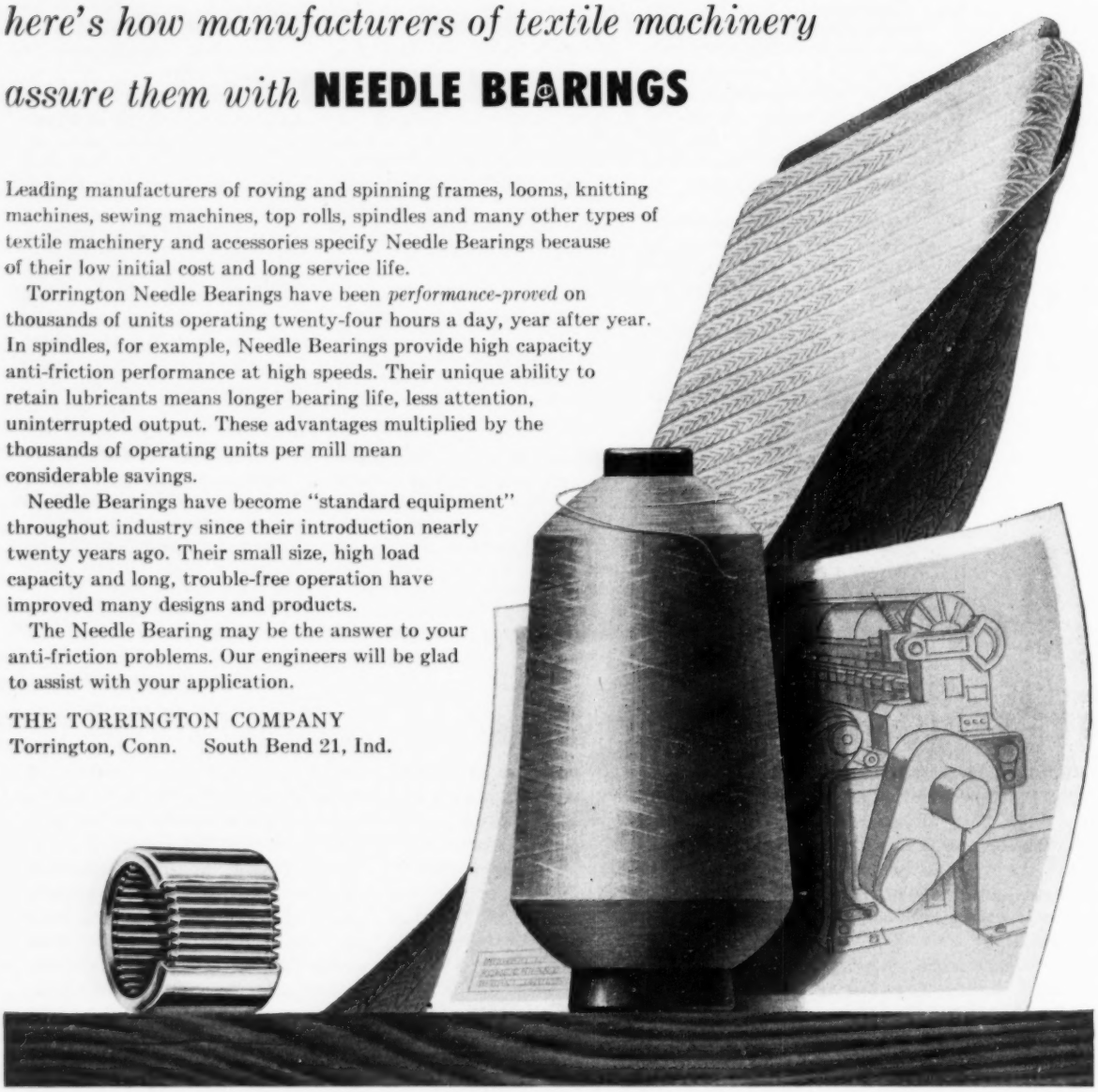

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is that everything looks so rosy and the economy always seems to be so sound and well established. Every time there is an inflation, millions of people say that this is the real thing. This time we have really captured that elusive thing —prosperity on credit. Nobody wants to believe that when the politician undertakes to distribute wealth faster than it can be created, serious trouble lies ahead.

Suitability of Selected Varieties of Cotton for Six Fabrics

To guide cotton producers, marketing agencies, and textile manufacturers in producing, procuring, and processing the cottons best suited to their particular needs, the Cotton Branch, Production and Marketing Administration, United States Department of Agriculture, recently published the results* of a study designed to determine by means of empirical tests the relative suitability of some of the more important varieties for manufacture into products for specific end uses.

Varieties of cotton, available in commercial quantities, utilized in the test were: Acala 4-42, Acala 1517, Amsak, Coker 100 Staple, Coker 100 W, Deltapine 15, Mesilla Valley, Pima 32, and Rowden. Fabrics chosen for the study included three military types — Army Sateen, Uniform twill, and balloon cloth — and three civilian types — print cloth, chambray, and sheeting.

Findings for each type of fabric are summarized below:

Army Sateen. Samples of Acala 4-42, Coker 100 W, and Deltapine 15 cotton were spun and woven into Army Sateen. There were no outstanding differences between the three.

In yarn strength, the Deltapine 15 sample was lowest, no doubt because of its lower fiber strength, but it showed up well in ends down at spinning. This lower yarn strength probably contributed to more loom stoppages, and the fabric was borderline for strength specifications. The margins in strength for Acala 4-42 and Coker 100 W were about 15 and 9 per cent, respectively, in the fabric, but the former had as many loom stops as did the Deltapine 15. Finishing was comparable for all three varieties.

Uniform Twill. There were only small differences in card nep counts and picker and card waste when Acala 4-42, Acala 1517, and Deltapine 15 cottons were processed into combed uniform twill.

No particular differences were noted in processing behavior; all three varieties handled well. Acala 1517 produced the strongest yarns, followed by Acala 4-42, and the Deltapine 15 was substantially lower. Yarn appearance of all three varieties was above average.

Yarn strength margins over specifications were substantial on Acala 4-42 and 1517, and borderline for Deltapine 15. Fabrics from all three varieties finished similarly.

Balloon Cloth. Amsak, Pima 32, and Mesilla Valley cottons processed comparably in the manufacture of balloon cloth. The Amsak cotton made the best fabric with respect to both strength and visual appearance. Finishing altered the fabric properties to a considerable extent, but the cloth from all cottons and organizations was affected comparably. All three finished fabrics exceeded military specifications for strength, the Amsak showing the greatest margin.

Messilla Valley — a long staple upland cotton — was included in this series to test its suitability as a possible substitute for the American Egyptian cottons normally used in such fine fabric.

Print Cloth. Fairly typical cottons of three varieties, Acala 4-42, Coker 100 Staple, and Rowden, were processed into plain print cloth. No marked differences were noted through drawing and roving processes. Rowden was difficult to spin and was unsuitable for 44s filling; 42s comprised the maximum but still showed excessive ends down. Yarn strengths followed staple lengths generally. Rowden was lowest, but this variety gave yarns of good appearance. Acala 4-42 and Coker 100 Staple were comparable in weaving performance, but Rowden caused a number of stoppages due to quality of yarn. Relative yarn strengths were reflected in fabric strengths, both grey and finished.

Print cloth from the Rowden variety was below the commercial average, but print cloth from Acala 4-42 and Coker 100 Staple varieties were substantially better than the commercial average in fabric strength.

After bleaching and mercerizing, fabric from Coker 100 Staple appeared smoother and whiter than that from other varieties, and this was confirmed by color measurements. However, larger differences evident in color of raw stock were greatly reduced by finishing processes, particularly when dyed blue.

Chambray. Varieties of cotton used for making print cloth were also spun and woven into chambray. Processing of all three was identical with that for print cloth, except at spinning; the yarns for chambray were finer. Here again, the Rowden was unsuitable above 42s.

Coker 100 Staple performed some better than Acala 4-42; but there appeared to be no significant difference between the yarn and fabric quality of these two varieties: both were substantially above the commercial average. Fabrics from all three varieties had practically the same appearance after bleaching, mercerizing, and dyeing.

Sheeting. Again the three varieties utilized in the print cloth and chambray tests were evaluated from the standpoint of comparative suitability for the manufacture of sheeting.

Rowden cotton proved very satisfactory in the coarser numbers of 22s, both warp and filling, and gave yarns of the highest appearance index. Because of its yarn strength, it caused warper and loom stoppages; however the resulting fabric was 10 to 15 per cent above commercial averages. Margins of Acala 4-42 and Coker 100 Staple were approximately three times more than the Rowden margin average, and these cottons were probably too high in quality for this end use.

All three varieties compared equally well in the test, and color differences in raw cottons practically disappeared in the bleached and dyed goods.

*U.S.D.A. report entitled "Comparative Suitability of Selected Varieties of Cotton for Six Textile Fabrics," published in Washington, D. C., May, 1953, gives complete information about the study, including test procedures and findings.

Cites Trend to Dynel-Cotton Blends in Warm Underwear

An increasing use of Dynel in blends with cotton for warm underwear for men, women, children and infants has been reported by Chester A. Strodl of the Textile Fibers Department of Carbide and Carbon Chemicals Company, Dynel producer.

Mr. Strodl said that 12 manufacturers are producing Dynel blended underwear for distribution in stores throughout the cold weather sections of the country this fall and winter. Garments include warm panties for women, long underwear, mid-lengths and briefs for men, T-shirts and midways for boys, and infants' creepers and two-piece sleepers.

Warmth, long wear, washability with negligible shrinkage, excellent shape retention and comfort next to the skin are the chief selling advantages of Dynel-cotton winter underwear, he said. Washing tests conducted by various retailers' laboratories have shown that repeated launderings actually increase the warmth of the new blends. In addition, the Dynel-cotton underwear eliminates worries over moth damage in storage. Also, there is no scratching or tickling.

"Most of the blended garments contain either 25% or 50% Dynel, with the remainder combed cotton," Mr. Strodl said. "Cotton contributes moisture absorption while the Dynel gives warmth and softness."

New Textile Fibers Created

(Continued from page 138-D)

ton fabric is more receptive to all classes of dyestuffs than cotton fabrics. This increased receptivity is manifested both by a greater rate of dye pickup from the dye bath and a greater exhaustion of the dye bath. Since the cyanoethylated cotton fabric more completely exhausts the dye bath, a lower concentration of dyestuff in the bath is required to give the same shade as that obtained for cotton fabric, as shown in Figure 8.

A listing of representative dyes which have been tested on cotton and cyanoethylated cotton 80x80 print cloth to obtain the same shades is given in Table II. The cyanoethylated cotton fabric used in this test contained 1.5% nitrogen. It will be noted that, in general, 33% to 60% less dyestuff was required to produce the same shade with the cyanoethylated cotton fabric as for the cotton fabric. In some cases, the light fastness of the cyanoethylated cotton dyed fabric was slightly less than that of cotton; but with most dyes, it was found to be at least equal. Both wash fastness and wet and dry crocking for the cyanoethylated cotton and cotton fabrics were found to be equal for all classes of dyes tested.

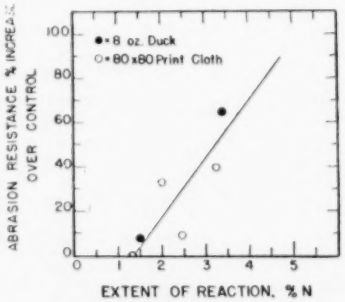
Abrasion Resistance Properties of Partially Cyanoethylated Cotton Products. Extensive tests made by the U. S. Quartermaster Corps have shown a good correlation to exist between service wear tests of fabrics and the Stoll flat abrasion tests. Stoll flat abrasion tests were, accordingly, used for evaluating the abrasion resistance of cyanoethylated cotton fabric. The abrading surface was 180 grit aluminum oxide cloth, the overhead weight was one-half pound, and four pounds air pressure was used to inflate the diaphragm under the fabric. The number of cycles required to abrade through the fabric was then determined and the per cent increase in abrasion resistance calculated using cotton fabric of approximately the same weight as a control.

The effect of the extent of reaction of eight-ounce duck and 80x80 print cloth with acrylonitrile to produce partially cyanoethylated cotton fabrics on the abrasion resistance was then calculated. The results obtained are shown in Figure 9.

It will be noted that, in general, the abrasion resistance of the fabrics increased as the nitrogen content of the cyanoethylated cotton fabrics increased. This finding is of considerable practical importance since increased wear of garments may result from clothing made from cyanoethylated cotton fabrics.

Cyanoethylated Cotton Fibers as a Basic Raw Material. Treatment of cyanoethylated cotton fibers, yarns, and fabrics with various types of swelling agents for cellulose results in the enhancement of certain of the enumerated properties. The use of partially cyanoethylated cotton as a basic fiber material for further treatment thus opens up new approaches to the problem of engineering textile fibers to achieve desirable end use products.

Handling of Acrylonitrile. Acrylonitrile was discovered in 1893 by the French chemist, Moureu[8], who showed it to have the structure,



(Fig. 9) ABRASION RESISTANCE (Stoll) of cyanoethylated cotton fabrics of various nitrogen contents.

$CH_2 = CH - CN$. For many years, this material remained a laboratory curiosity. It was not until the outbreak of World War II, when it was found that valuable synthetic rubber could be prepared by the copolymerization of acrylonitrile with butadiene, that the material was produced in large quantities in the United States and in Germany. The use of acrylonitrile in synthetic rubber products has declined since World War II, but its use in the preparation of acrylic fibers has greatly increased.

Although acrylonitrile is toxic, inflammable, and forms explosive mixtures with air[1, 2], the fact that millions of pounds are handled each year without accident is proof that it is not unduly dangerous if reasonable safeguards are taken. It is quite essential, however, that operating personnel be conversant with the hazards involved in handling this material so that they might take the necessary precautions. It is recommended that any mills wishing to use this process either contact the Institute or one of the producers of acrylonitrile.

Cost of Treatment. The price of acrylonitrile is one of the determining cost factors in the production of cyanoethylated cotton fibers. Recently, the price of acrylonitrile was reduced by one major producer to 36¢ per pound. Another producer of acrylonitrile has estimated that as of January 1, 1954, the price of acrylonitrile will be reduced to 31¢ per pound[9].

Due to the changing price of acrylonitrile, it is, therefore, difficult to estimate accurately the cost of producing cyanoethylated cotton products at this time. It can be stated, however, that with the price of acrylonitrile equal to or less than that of cotton, the cost of cyanoethylated cotton products will exceed the cost of similar cotton products only by the handling and recovery cost of the acrylonitrile.

Plans are now being made to set up one or more pilot plants in Institute member mills for treating fibers and yarns which include acrylonitrile recovery units for the spent liquors so that the economics of the process may be determined.

Acknowledgement. The development of the process for the production of cyanoethylated cotton fibers and yarns in a conventional 50-package Gaston County package dyeing machine has been greatly implemented by the assistance of Aubrey A. Hobbs, vice-president, Standard-Coosa-Thatcher Company, Chattanooga, Tennessee, and Project Advisor for the Institute's Technical Advisory Committee.

The interest and assistance of Dr. A. J. Weith, Jr., assistant to the director of sales, American Cyanamid Company, New York, New York, and of several members of American Cyanamid's engineering staff, in translating the laboratory procedures into the preliminary full-scale production studies in a mill, is gratefully acknowledged. During the past two years, the American Cyanamid Company has also sponsored a student fellowship at the Institute which has supplemented the fundamental studies on the cyanoethylation of cotton.

The untiring assistance of H. A. Mereness and other members of the Institute's Textile Testing Laboratory is also gratefully acknowledged.

LITERATURE CITED

1. Acrylonitrile, Chemical Safety Data Sheet SD-31, Manufacturing Chemists' Association, Inc., 246 Woodward Building, Washington, D. C.
2. American Cyanamid Company, Nitrogen Chemicals Digest, Vol. V, The Chemistry of Acrylonitrile, 95 pp. (1951). The Beacon Press, Inc., New York, New York.
3. Bruson, H. A. Cyanoethylation. Resinous Products and Chemicals Co., Rohm and Haas Company, Inc. Organic Reactions 5, 79-135 (1949). John Wiley & Sons, Inc., New York, New York.
4. Compton, Jack; Jones, Catesby; Roberts, Donald; and Thompson, Dorothy D., Effect of Partial Cyanoethylation and Acetylation on Certain Measurable Properties of the Cotton Fiber. Paper presented before the Southeastern Regional Meeting of the American Chemical Society, Auburn, Alabama, October 24, 1952.
5. Hollihan, J. P. and Moss, S. A., *J. Ind. Eng. Chem.* 39, 929 (1947).
6. Farbenind, I. G., A. G. French Patent 830,863.
7. MacGregor, J. H., *J. Soc. Dyers and Colourists*, 67, 66 (1951); Ibid. 67, 74 (1951).
8. Moureu, C., *Ann. Chem. Phys.* (7) 2, 186 (1893).
9. Weith, A. J., Jr., *Chem. and Eng. News* 31, 2763 (1953).

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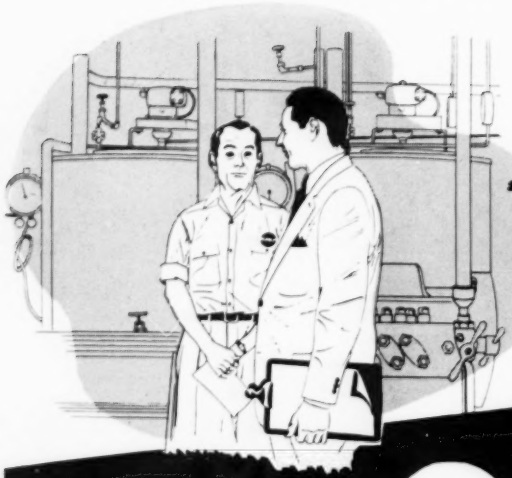

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Write to the Editors!

Readers are invited to make use of this section for further discussion of published articles, or for discussion of problems arising in the plant. Names will not be used without permission. Payment is made for practical articles or for letters containing manufacturing information.

Address: Editor "Textile Industries," 806 Peachtree St., N. E., Atlanta, Ga.

Bad Card Plates Put Neps into Silver

EDITOR TEXTILE INDUSTRIES:

Many articles have appeared on neps in card sliver, and neps can't be drafted out on the drawing or roving frames. Of course the neps show in the cloth, and large neps in cloth appear like tail ends made in creeling on roving and spinning, and these tails also show in our cloth. Some mill men say neps are caused by long pipe lines to move cotton from opening to picking; others say neps are caused by high beater speed, draft, and slow top flats.

I should like to set forth my observations about neps. Some neps are already in the cotton as it comes from the gin. We make more neps as processing progresses. But where is the superintendent or carder who would admit making neps? A card can make more neps and curls than can be counted in one can of sliver.

When neps are imbedded in other cotton they are not usually removed in the opening or the picker room. If lint or cotton were not stuck to small particles of seed hull, the hull would probably be knocked into the mote or fly box and never get to the card. If a high fan speed is employed in opening and picking, the fan draft picks up the neps many times after the beater knocks them out of the cotton. Before the neps reach the floor in the mote box, they are carried back into the cotton. When the lint and hulls are picked up the second time, they are lighter and larger because they are dry and fluffy.

The mote box may be checked easily. The box should have two solid doors tightly fitted. Drill a ¾" or a 1" hole to provide a view into the mote box. If the fan speed is high the draft may be seen picking up the neps before they reach the floor. The dryer the cotton, the warmer the picker room, the more neps the fan puts into circulation. If you don't have a good mote box, most of the short lint is picked up, and later this lint makes more card fly. There is a better opportunity to send this lint to the dust house from two-process pickers than from one-process pickers.

On cards, a nip or rough place on the back plate will hold full length cotton fibers until they form a ball or string which becomes pressed hard against the cylinder until jerked loose. These balls of lint become large because the back plate is set from .017 to .034 in. If the top flats are set .012 to .015, grinding both cylinder and flats does little to reduce these neps. The balls of lint usually stick to top flats and go through to the doffer, which may be set at .007 inch. The doffer is clean and holds the nep until the doffer comb knocks it off into the sliver.

You may have a new licker-in, new doffer clothing, and cylinder

KINK CONTEST!

$100 will be awarded the winner.

Send your entry now!

This contest ends November 15, 1953.

Every kink, short-cut, time-saver, or quality improvement suggestion entered in the contest will be paid for immediately upon acceptance. The $100 award will be made as soon as all entries are judged.

The contest rules are simple:

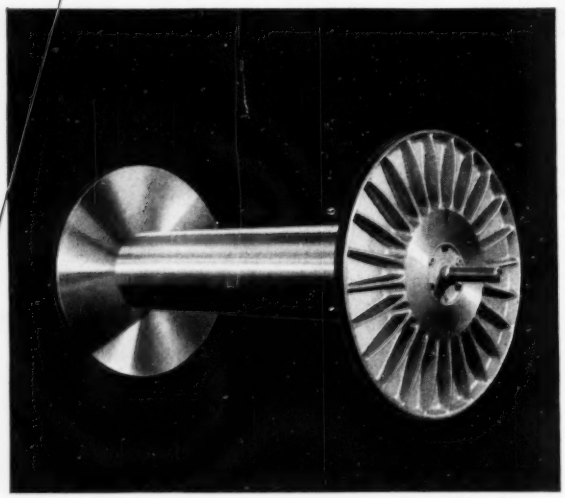
► All contributions must be postmarked not later than midnight, November 15, 1953.

► No limit to the number of entries an individual may submit in any one contest.

► All entries paid for upon acceptance—no waiting. Extra payment for photographs that are usable. Extra consideration is also given kinks accompanied by legible pencil sketches or drawings.

► Entries must not have been published previously.

Send your contest entry to: Editor TEXTILE INDUSTRIES, 806 Peachtree St., N. E., Atlanta 5, Georgia.



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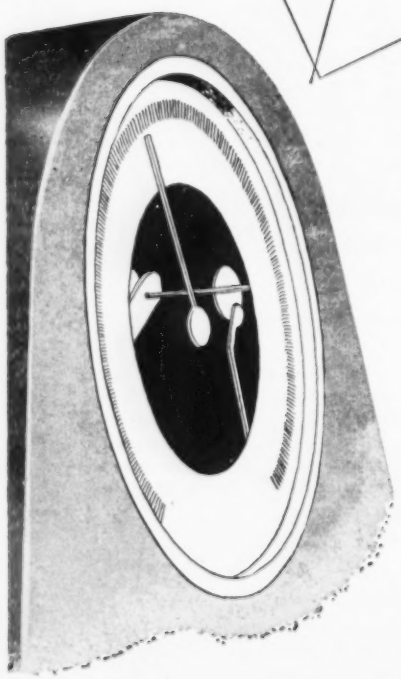
proves strength of new HAYES aluminum nylon beam



On May 26, 1953 in a test made by the Engineering Department of Swarthmore College, this Hayes Aluminum Nylon Beam withstood a load of 263,000 pounds. With continued loading, the head casting cracked — even then — the beam still held a load of 80,000 pounds, which is considered sufficient for removal of nylon yarn without loss of material. There was no failure of the threads holding head to barrel.

The NEW beam is the only aluminum section beam being produced primarily for nylon and includes these features which make it of particular interest to the textile industry:

— available in 30″ and 32″ head diameters.
— heavy center hub construction, with 24 reinforcing ribs.
— ½″ minimum wall, high strength aluminum barrel.
— adaptable for use with all current makes of warpers.

This beam is merely another instance of Hayes long experience in the manufacture of light weight metal beams. Its greater head strength, increased rigidity, permanent running balance, and glass-smooth, rust-proof surfaces exist in all Hayes beams. Write today for complete information on Hayes beams.

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and top flats all ground and properly set and have bad back and front plates. This is how neps and curls get into the sliver. You can set the plates if they are in good shape and still do almost as badly. As the cylinder becomes loaded before stripping time, more neps go through and into the sliver because the cylinder is full.

Cards 20 to 40 years old are equipped with light plates and they sometimes get warped in the middle. If the ends are set to .017 to .022, the setting may be off to .034 or more in the middle. I like to set top plates at .022 and bottom at .034. This gives an angle to the plate and turns edge of plate to cylinder. You may have noticed where front plate has been cut for strippers. Back or front screws or rivet holes fill up with lint which is jerked into cylinder, and then into sliver. It is essential to have the plate properly aligned.

CONTRIBUTOR No. 8538

Beats Per Ounce Count --- Not Beats Per Inch

EDITOR TEXTILE INDUSTRIES:

Over at Blendville, Joe Mote is doing a beautiful job on his pickers. His laps are nice and smooth, quite clean, hold within close tolerances on the lap charts, and the nep count in the card web is quite satisfactory. He is running an 11-oz lap with sixty beats per inch on Strict Low Middling 1" staple.

Over at Baleborough, Bill Nep cannot understand why Joe is getting a better, cleaner, and evener lap that generates less neps than he does. After all, they are good friends and have swapped information all the way through. In fact, Joe spent a whole day over at Baleborough going over settings, speeds, productions, etc., with Bill, and everything seemed to check with Joe's set-up; the only difference was that Bill had to run a 15-oz lap in order to keep up his production, but they reasoned that that should make little difference.

Actually that little point is the big factor contributing to the differences in the quality of the laps between the two mills.

This story is told to illustrate the fact that when "Beats per Inch" is used as a yardstick, we might just as well not have a yardstick. When we speak of beats per inch, we are speaking of a lineal measurement and no consideration has been taken of the bulk being beaten per inch or per yard.

In order to evaluate beats intelligently, we must express them in terms of bulk of stock being beaten; that is, in terms of beats per cubic inch of stock or per pound or per ounce of stock. It is obvious that the practical method would be to express beats in terms of beats per ounce.

Once this method is accepted, the trade will have a universal yardstick with a fixed scale to work from and there can be no misunderstanding as we will be dealing with a basic fact.

The table [on page 194] shows the difference in blows per ounce, using sixty blows per inch, and laps from 10 to 20 ounces per yard. This proves beyond doubt that "Beats Per Ounce" is the important factor to consider.

(Continued on next page)

Save That Testing Stock!

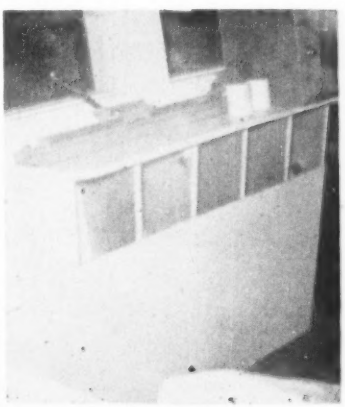
EDITOR TEXTILE INDUSTRIES:

Too often mills put into sweeps or waste the stock they use in sizing and testing. This can amount to a considerable loss over the years. For example, below is a breakdown of stock used over a period of one year or 50 weeks in testing just one warp number.

Card sliver for testing	25 lb
Card sliver for sizing	65 lb
Drawing sliver for testing	22 lb
Drawing sliver for sizing	65 lb
Roving for testing	31 lb
Roving for sizing	150 lb
Picker laps for testing	2400 lb
Yarn for sizing and testing	325 lb
	3083 lb

A rayon mill running six or eight different blends would use six or eight times the above amount over the same period, and this could run into big money. To help eliminate the possibility of our stock getting into waste or mixed with another blend, we built a section of bins for our testing lab in which we store used stock until we can run it back into production with the reworkable waste, or through our thread machine. The accompanying photo shows our bins and how they are fastened to the wall in an out-of-way place.

CONTRIBUTOR No. 8621



Difference in Blows Per Oz @ 60 Blows Per Inch

60 beats per inch on a 10-ounce lap = 216 beats per ounce.
60 beats per inch on a 11-ounce lap = 196 beats per ounce.
60 beats per inch on a 12-ounce lap = 180 beats per ounce.
60 beats per inch on a 13-ounce lap = 166 beats per ounce.
60 beats per inch on a 14-ounce lap = 154 beats per ounce.
60 beats per inch on a 15-ounce lap = 144 beats per ounce.
60 beats per inch on a 16-ounce lap = 135 beats per ounce.
60 beats per inch on a 17-ounce lap = 127 beats per ounce.
60 beats per inch on a 18-ounce lap = 120 beats per ounce.
60 beats per inch on a 19-ounce lap = 113 beats per ounce.
60 beats per inch on a 20-ounce lap = 108 beats per ounce.

If we check Joe Mote's mill against Bill Nep's mill on the table, we find that Bill has 52 or 26½% less blows per ounce than Joe, although they both have the same number of blows per inch.

Note: Draft between beater and calender has been ignored to simplify the calculations; the figures are accurate for all practical purposes.

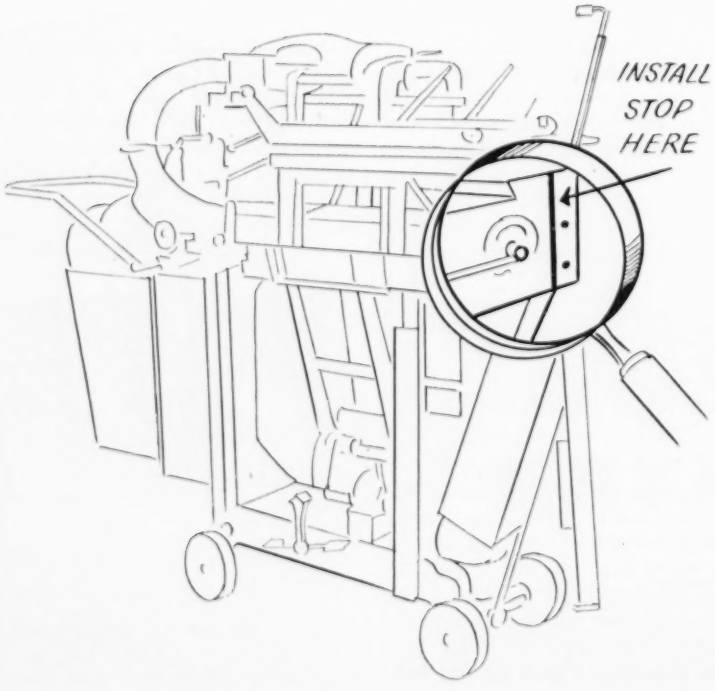
PAUL C. GRANT, JR.

Stop Bending Tension Disc on Warp Tying Machine

EDITOR TEXTILE INDUSTRIES:

On Barber-Colman warp tying machines, the carriage may slide past the end of the bed and bend the tension disc. A piece of metal four inches long, one inch wide, and ⅛-inch thick may be fastened to the machine in a way to remedy the difficulty.

The accompanying illustration shows the location of the piece of metal. Two holes are drilled in the metal plate to take ¼-inch bolts, and the machine must be tapped to accommodate the bolts which fasten the plate to frame.



CONTRIBUTOR NO. 8588

Help for Reader Weaving Sateens

Question Briefed: *In setting up the loom for weaving any type of fabric that requires a dobby, I have trouble putting in place in the lower part of the harness a quantity of large springs which exert a heavy force on the harness straps and dobby. Consequently, the heddles have no play.*

The opening of the shed is much higher (more than ⅛") than the shuttle race. In a typical instance on sateen with five harnesses to operate four up and one down, it was necessary to operate one up and four down. (CONTRIBUTOR NO. *8581, August, 1953.)*

EDITOR TEXTILE INDUSTRIES:

In regard to CONTRIBUTOR NO. 8581, it seems to me that he has the harnesses set too high off the race board or his direct spring is not tight or heavy enough for this particular fabric. I do not know the sley or number of yarn used in the cloth; therefore a complete answer to his problem is difficult.

There is a possibility of having too much shed on the dobby or running the warp excessively tight. The dobby should be set to have approximately 3½" to 3¾" with head or dobby knife at most outward position with bottom knife in a forward position. Take hook No. 1 and let it down. Have No. 2 hook on, then there should be between 3½" to 3¾" between the two jack levers where eye on dobby loop hooks on. Lay should be set 2" to 2½" from fell of cloth with harness No. 1 and 2 crossing. If CONTRIBUTOR NO. 8581 will give the construction and type of yarn complete, I will be glad to assist further. The above settings apply to 44" x 108 x 70 with 36/2 warp and 23/2 filling, operating 4 up and 1 down.

CONTRIBUTOR NO. 8627

Improvised Device for Cutting Slab Leather

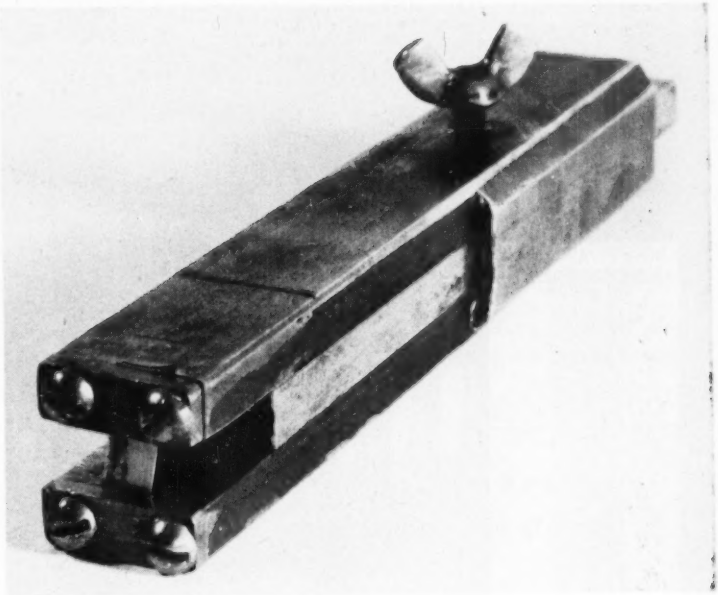
EDITOR TEXTILE INDUSTRIES:

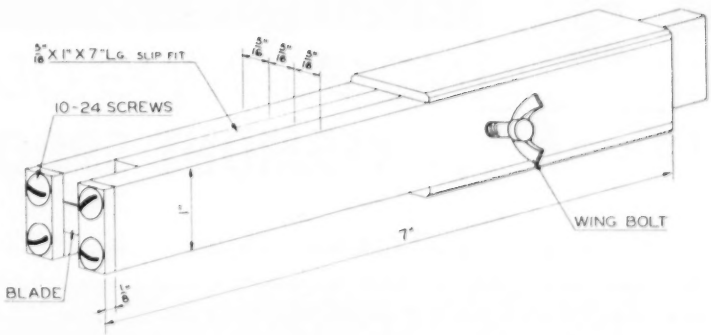
We buy slab leather which comes in irregular widths. In order to cut the leather to size we made a tool to do the job. The tool is made of steel stock 5/16″ thick and one inch wide. The device may be used in a vise or fastened to a work bench. I use it to cut leather to size for covering binders.

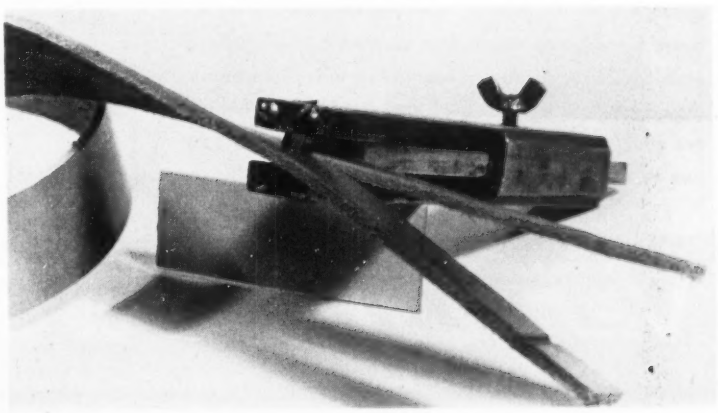
The top of the tool serves as a rule, and leather can be quickly and cleanly cut down to size. I use old blades from a Schick razor inserted on an angle. One blade will last for weeks. Leather up to ¼″ thick may be cut and can be trimmed to 4″ wide. We also cut picking parallel spring leather and box top leather. Leather can also be cut to different shapes in one piece by moving the slide bar to the desired position.

The slide bar is 8″ long, the length of the tool. The part for pulling leather through is 4″ long. The parts are welded together. A hole is bored in the handle. This hole is tapped and a thumb screw is used to set the slide in various positions. The accompanying illustrations show the details of the handy device.

CONTRIBUTOR No. 8603



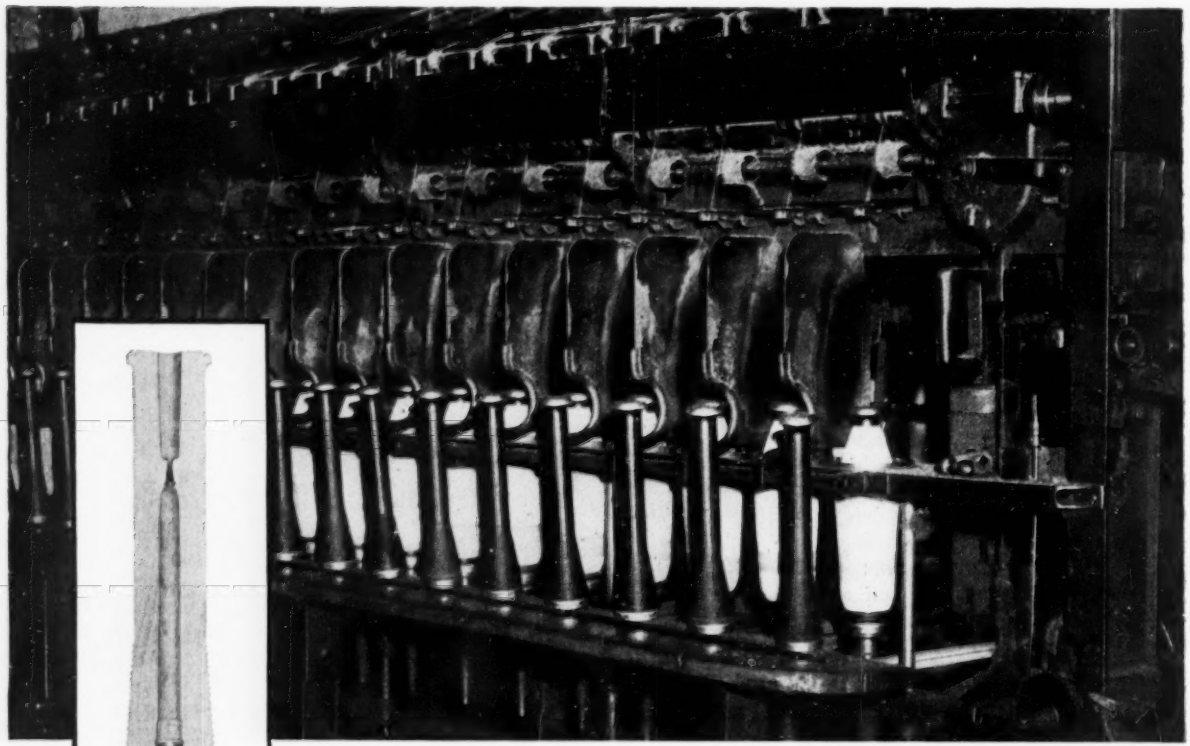


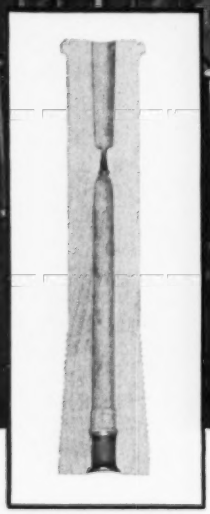


ENTER TI's KINK CONTEST WIN $100

Readers of TEXTILE INDUSTRIES are invited to enter the current KINK CONTEST. You may win the $100 cash prize by submitting idea, time-saver, or production kink. For further details, see the announcement on page 191 in this issue.—Ed.

Cut replacement costs!





Cross section view showing machining details and bushings.

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Spare Parts Save Lost Time On Mules

EDITOR TEXTILE INDUSTRIES:

We are members of a fast disappearing type of textile men called "mule spinners." Our only excuse for existence in the highly competitive business of spinning is the excellence of our yarns. Imagine our concern when the quality control department reported strength variation from mule to mule that could not be ignored.

We tried switching roving about from machine to machine in an attempt to defend the mules and put the blame on the roving. All of our checks on twist gears and other details showed all mules spinning the same counts to be similarly geared. This all proved nothing, however. Mules which produced weak yarn always produced yarn weaker than the others After many more checks of strength and twist, it was revealed that the weaker yarns had less twist. Again we checked all gears affecting twist. We also checked brackets and levers which controlled "length of stretch."

Eventually we found the trouble to be due to the rim-band slippage caused by wear of the grooves of the "tin roller pulley." This in turn was caused by slack rim-bands at some time or other. The wear made the sides of the grooves concave instead of straight, thus destroying the normal wedge effect usual with rope pulleys. The installation of a new tin roller pulley for a badly worn one caused the twist and yarn strength to return to normal.

However, the solution of one problem created another. We have a large number of mules (192), and to prevent the trouble occurring again within a few years, we decided to put new tin roller wheels on all mules. It usually took four hours to strip all parts necessary to get to the tin roller wheel, fit a new key to the wheel, put the rest of the parts back again, and put the mule back in operation.

It appeared that we should lose about 800 mule-hours production in addition to the new pulleys and the fixers' pay. A quick study of the job showed that the major portion of the time was spent making the actual changes to the "middle piece." Slightly less than an hour was spent removing this part from the machine and putting it back again. The next logical step was to see if we could find standard positions for the various mechanisms on the middle piece so the time consuming task could be done while the mule continued to run. After a few attempts, we discovered by trial and error that this could be done successfully. Instead of losing several hours per mule, we only lost one with the new procedure. A net saving of 600 mule hours was effected on that job alone.

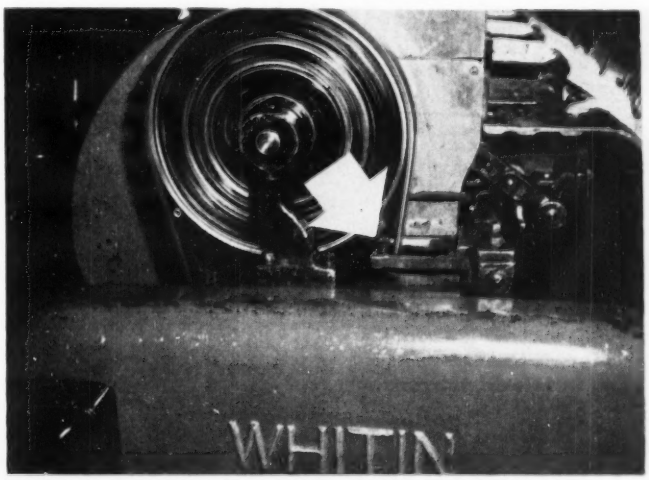
We prepared the middle piece, complete with all the necessary

Prevent Belts Slipping From Drawing Frame Shipper Fork

Belts are prevented from slipping out of the shipper fork on the drawing frame as a result of a suggestion by J. Robert Oliver, card room employee at the Edna Plant of Cone Mills Corporation, Reidsville, N. C.

The problem which his suggestion solved was that of the belt slipping out of the shipper fork onto the loose pulley when a thick place in a sliver came through the drawing rolls; or of the belt slipping out of the fork and not being carried to the loose pulley when the stop motion was activated, and thus running with one end down in back. Mr. Oliver's suggestion, which has been adopted, was to weld a piece of metal across the ends of the shipper fork to keep the belt in place.

A cash award under the Cone Mills Suggestion System was presented to Mr. Oliver for this.



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new parts, in the workshop. Even the tin roller blocks were in position. The mule was stopped, the old middle piece was taken out and replaced by the new one, and the mule was then put back into production. While the mule continued to run, we could work on the old middle piece, replacing worn parts at odd moments during normal work. When the work is done on a routine basis, it is usually done more thoroughly.

We applied the knowledge gained from experience with many other jobs which had previously cost us production. For example, we now keep a bottom scroll shaft ready to be put in a mule, should a breakdown occur. If the slightest thing goes wrong with anything on the shaft, we take it out and put in the one already prepared, making the necessary repairs to the shaft with the machine running. We maintain an adequate stock of spares to prevent lost time on breakdowns.

CONTRIBUTOR No. 8591

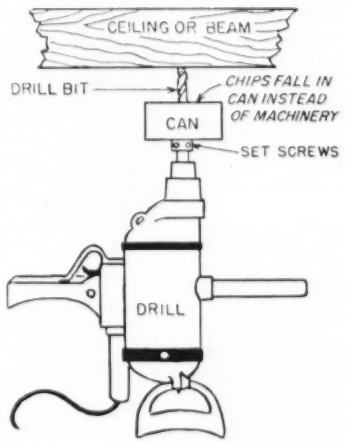
Drill Receptacle Keeps Waste Chips Off Work

EDITOR TEXTILE INDUSTRIES:

We were remodeling our boarding and preboarding room in our hosiery plant and found it necessary to resume production before the lighting could be rearranged. The continuous row fluorescent fixtures were suspended by steel rods fastened through sections of ceiling I-beams, and in order to relocate the lights, it was necessary to drill new holes upward through the steel flanges. However, the steel chips from the drill bit were falling into the machinery and damaging the hosiery being processed. The maintenance supervisor declared that production operations would have to be stopped before the remodeling could be finished.

I learned about the problem, and immediately obtained a small empty can from the cafe. The can is about 3¼″ in diameter by 2″ in height. The top of the can had been removed, and the bottom was intact. A collar was obtained (see accompanying sketch) measuring ⅞″ outside diameter, ½″ in height, and having a ½″ hole in the center. We drilled and tapped the collar for ¼″ screws at three places equally distant on the outside circumference.

The collar was then soldered to the center of the can bottom, and a drill bit was inserted through it,



and the set screws tightened equally on the drill shank. This formed a cup around the drill bit, and when drilling was resumed a short time later, all of the chips were caught in the improvised cup, thereby permitting production to proceed during remodeling.

This idea can be used with most any kind of drill or auger and is certainly worthwhile in preventing damage to machinery or avoiding damage or spoilage to goods in production. It is useful in preventing debris from falling on expensive floors in offices and elsewhere.

CONTRIBUTOR No. 8506

Don't Heat Magnetized Dobby Knives

In TEXTILE INDUSTRIES of June, 1953, page 132, there is an article referring to adjustment and care for a dobby, and one paragraph in this article mentions the fact that sometimes the hooks may be slow in leaving the knife, causing mispicks, and that this may be caused by magnetism in the dobby knife.

Years ago we received quite a number of complaints on this trouble, and we found in some cases a certain amount of magnetism was left in the knife from the magnetic chuck on which they were held while being ground. At that time it was decided that these knives should be demagnetized before being used.

I think, however, that the present method of hardening these knives would destroy any magnetism that might be left in the knives without the demagnetizing operation.

The point I want to bring to your attention is the method of removing the magnetism recommended in this article, which states they can be heated with a torch to remove the magnetism.

These knives are given a heat treatment to harden the surface where the hook contacts to give a wear resistant face at this point. Heating the knife to a temperature that would remove the magnetism would also anneal the wearing surface, leaving the metal soft.

Another trouble that might be experienced with this method is that the heat from a torch would be applied locally to the knife and might very well cause the metal to warp out of shape.

E. R. HOLMES
Crompton & Knowles Loom Works

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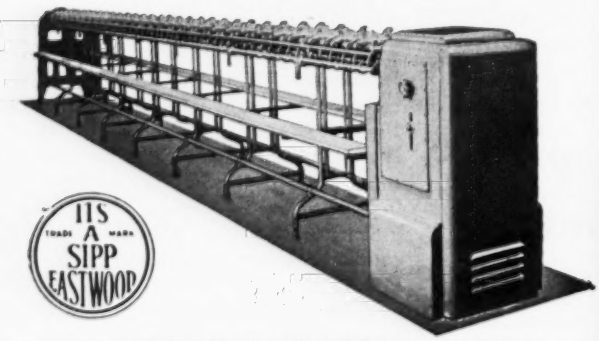

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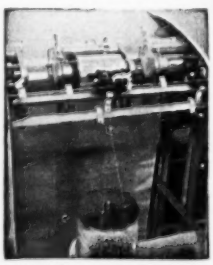
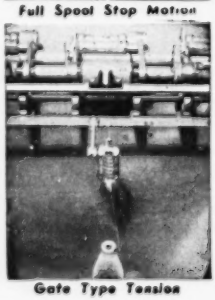

Self-Threading Tension

Full Spool Stop Motion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LATE BULLETINS

1-E For complete information on the Diehl Power Transmitter, including specifications, working principles, etc. Write Diehl Manufacturing Co., Somerville, New Jersey.

2-E Hilton Davis Chemical Co. can supply the answers to your textile dyestuffs problems. Complete technical facilities available to serve you. Write The Hilton-Davis Chemical Co. Div., 2235 Langdon Farm Rd., Cincinnati 13, Ohio.

10-1 Bearings, Bar Bronze, Babbitt. 104-page catalog by Johnson Bronze Co. gives a complete breakdown of Johnson's entire range of industrial bronzes. Numerical listings, specifications, etc. Write Johnson Bronze Company, New Castle, Pa.

10-2 Wool Oils. Twin booklets by Proctor and Gamble tell of the influence of wool oils in producing quality yarns and fabrics, and of Proctor and Gamble's Proxol T, an outstanding wool oil. Write Proctor and Gamble Dist. Co., Cincinnati, Ohio.

10-3 How to Operate a Lift Truck. Booklet by Hyster is fifth edition showing operation of lift truck, preventive maintenance, safety and basic materials handling. Drawings for setting up an obstacle course are also included. Write Hyster Company, 2902 N. E. Clackamas Street, Portland, Oregon.

10-4 Printing Equipment. Bulletin by Waldron Corporation shows several types of surface, rotogravure and aniline printing machines. Advantages, working principles, pictures, and schematic diagrams shown for each. Write John Waldron Corp., P. O. Box 791, New Brunswick, N. J.

10-5 Texalox Roll Covering. New brochure by Carborundum Co. describes its "Texalox" take-up roll covering. Texalox can be used for all types of textiles and comes in various degrees of coarseness. Two grit samples are attached to the brochure. Write The Carborundum Co., Niagara Falls, New York.

10-6 "Air Conditioning in the Manufacture and Testing of Textiles." One of the ten papers presented to the American Society for Testing Materials. This is of particular interest to textile people. For copies, write Parks Cramer Co., Fitchburg, Massachusetts.

10-7 "Taking the Hands Out of Materials Handling" is the title of a new folder by Union Steel Products Co. In color, it gives complete data and shows many applications of rugged steel mesh containers. Write Union Steel Products Company, Materials Handling Division, Albion, Michigan.

10-8 Improved Sliver Lifting Frames. New color booklet by Gladwin Plastics shows many advantages of recently improved sliver lifting frame with plastic guides. Comprehensive pictures give operational characteristics and applications. Write Gladwin Plastics, 275 Houston Street, Atlanta, Georgia.

10-9 Liquid Nonionic Synthetic Detergents. Booklet entitled "For Your Textile Scouring Operations . . . Energetic and Energetic S Synthetic Detergents," is available to mill men. A technical paper, it gives properties and uses. Write Armour Industrial Soap Dept., 1355 West 31st St., Chicago 9, Illinois.

10-10 Automatic Metering and Controlling. 16-page catalog describes complete line of instruments for metering and controlling 17 process variables. Of interest to process and instrument engineers, it offers ranges, specifications, and detailed explanations on all instruments. Write Bailey Meter Co., 1050 Ivanhoe Rd., Cleveland 10, Ohio.

10-11 "Across the Line Starters" are described in a new eight-page bulletin by Allis-Chalmers. Covers manual and magnetic types of starters, and combination and reversing starters as well as push button control stations. Write Allis-Chalmers Mfg. Co., 1054 S. 70th St., Milwaukee, Wisconsin.

10-12 Uses of Persulfates. A bulletin which presents a bibliography of the properties and uses of persulfates is available from the Buffalo Electro-Chemical Company. Application to Textiles discussed thoroughly. Write Buffalo Electro Chemical Co., Station B, Buffalo 7, New York.

10-13 Slashing Equipment. Brochure by Tower Iron Works shows different types of slashing equipment, enumerating characteristics and advantages of each. Write Tower Iron Works, 50 Borden St., Providence 3, R. I.

10-14 Silicone Water Repellent. Bulletin describes Dow Corning's DeCetex 104 Emulsion. Gives typical physical properties, methods of application, curing temperatures, after-treating, etc. Write Dow Corning Corporation, Midland, Michigan.

10-15 The Story of Starches. Well handled book by National Starch presents information of value to chemists and other technically trained people concerned with starches, written in a way that is also interesting to non-technical readers. Write National Starch Products, Inc., 270 Madison Ave., New York 16, N. Y.

10-16 New Lubricated Plug Valves. Illustrated booklet by The William Powell Co. features a new line of semi-steel and steel lubricated plug valves. Advantages include quick and positive shut off. Write The William Powell Company, 2525 Spring Grove Ave., Cincinnati 22, Ohio.

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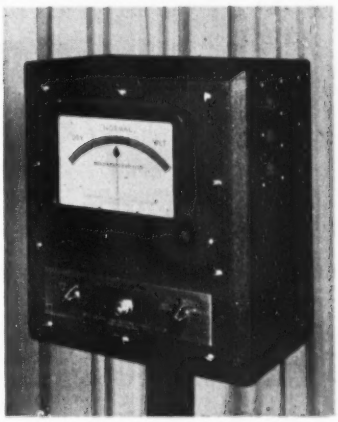

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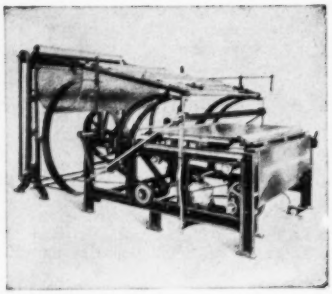

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7. RAYON TELLS ITS STORY TO THE PUBLIC—Folder containing reprints of advertisements explaining some of the many roles to which rayon is serving the American public.—AMERICAN VISCOSE CORPORATION, 350 5th Ave., New York 1, N. Y.

17. A FAIR DAY'S PAY AND IN RETURN A FAIR DAY'S WORK—8-page booklet outlining the services offered to industry for the proper utilization of labor, material and equipment, and the resulting advantages for both labor and management.—AMERICAN ASSOCIATED CONSULTANTS, INC., 250 Park Ave., New York, N. Y.

18. FACTORING—Information available on how factoring works to aid client in keeping capital fluid and to avoid credit losses. Inquiries regarding these services welcome.—L. F. DOMMERICH & CO., 271 Madison Ave., New York 16, N. Y.

19. INDUSTRIAL BUILDING—A 32-page booklet entitled "U. S. S. 12, U. S. S. 17 Stainless Steel Walls and Roofs for Industrial Buildings." Is now available for distribution. This publication illustrates the use of type 410 and type 430 Stainless Steel Sheets in the construction of industrial and semi-industrial buildings.—U. S. STEEL CO., 525 William Penn Pl., Pittsburgh 30, Pa.

20. VISION TESTING EQUIPMENT—Pamphlet entitled "What You Can Expect from a Good Vision Program," written by a prominent personnel director. Also circular describing the Keystone Occupational Visual Service.—KEYSTONE VIEW COMPANY, Meadville, Pa.

22. THE WONALANCET WAY—Is the title of a editorial booklet published five times a year and deal with current problems which appear worthwhile at the time they are written.—WONALANCET COMPANY, 128 Burke St., Nashua, N. H.

PLANT & PLANT MAINTENANCE . . .

101. TEXTILE DIGEST—18-page manual reviewing performance-proved procedures for improved handling of more than 60 essential cleaning and related operations in textile mills.—OAKITE PRODUCTS, INC., 22 Thames St., New York, N. Y.

102. "TANK TALK"—Sixteen-page booklet of illustrations showing various types of elevated steel tanks constructed and erected by manufacturers as well as stand pipes, reservoirs, storage and high pressure vessels, cylinders, along with helpful technical data. Also a list of what a few of the cotton mills, etc., said.—R. D. COLE MANUFACTURING COMPANY, Newnan, Ga.

103. HUMIDIFICATION, EVAPORATIVE COOLING—Bulletins available displaying AMCO automatic self-cleaning atomizers, controls, and evaporative cooling equipment.—AMERICAN MOISTENING CO., 260 W. Exchange St., Providence, R. I.

107. FINNELL SCRUBBERS—Illustrated leaflets describing and giving specifications for the Finnell floor scrubbing machines.—FINNELL SYSTEM, INC., Elkhart, Ind.

108. MAPLE FLOORING—Booklet describing finishing of Northern Hard Maple Flooring—it of M.F.M.A.-approved heavy-duty floor finishes.—MAPLE FLOORING MANUFACTURERS ASSOCIATION, Pure Oil Bldg., 35 East Wacher Drive, Chicago 1, Ill.

109. CARD STRIPPER — Portable dustless card stripper described in bulletin 1051. Advantages of dustless stripping when combined with thorough brush stripping. Used alone or with other systems discussed.—PARKS CRAMER CO., Fitchburg, Mass., and Charlotte, N. C.

111. INDUSTRIAL FANS—Catalog sheets with specifications describing the complete line of Murray Industrial fans for plant ventilation. Seven sizes described from 24" with 1/3 HP motor delivering 5700 CFM to 54" with 3/4 HP delivering 17,386 CFM with advantages of heavy gauge metal construction brought out.—H. C. BIGLIN CO., 177 Harris St., N.W., Atlanta, Ga.

113. COTTON MILL EQUIPMENT—This book traces pictorially the steps in processing raw cotton into finished cloth. It shows the equipment needed for all phases of production, as well as containing a "Useful Information" section on Power Factor Correction, Lighting, Circuit Protection, etc.—WESTINGHOUSE ELECTRIC CORP., 511 Wood St., Pittsburgh 30, Pa.

119. MOPPING EQUIPMENT—Complete catalog and circulars containing information on the many sizes and styles that can be had.—S. C. LAWLOR CO., 121 N. Aberdeen St., Chicago, Ill.

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126. "SENTRY-LITE" bulletin illustrating and describing light unit that comes on automatically when power fails, illuminating 10,000 sq. ft. 9 hours or longer. Cleveland Electric Co., 557 Marietta St., N.W., Atlanta 3, Ga.

127. SOLENOID VALVES—Bulletin "V" lists sizes from 1/2 inch to 3 inches; valves for normally open or closed service; stainless steel or Jenkins disc seats; three-way solenoid valves, etc.; typical installations.—THE JOHNSON CORP., Three Rivers, Mich.

129. AIR CONDITIONING AND HUMIDIFICATION—Catalog section 101 lists and briefly describes each item of the complete Bahnson line of equipment for textile mill air conditioning and humidity control.—THE BAHNSON COMPANY, Winston-Salem, N. C.

131. LIGHTING EQUIPMENT—Pulletin lists and describes the Crouse-Hinds line of lighting equipment which includes floodlights, searchlights, types of industrial lighting fixtures of vapor-tight, dust-tight, and explosion-proof types.—CROUSE-HINDS COMPANY, Syracuse 1, N. Y.

131. "AIR PROCESSING."—Set of three bulletins showing real meaning of the term, where it can be used, the requirements for a successful system, etc. J. O. ROSS ENGINEERING CORP., 444 Madison Ave., New York 22, N. Y.

133. PAINTING SPECIFICATIONS AND COLOR CHIPS—Industrial Paint and Color Guide, CC446, gives full painting specifications for exterior and interior of industrial plants with complete color samples.—THE SHERWIN-WILLIAMS CO., Painter Maintenance Div., Cleveland, Ohio.

135. COLOR CONDITIONING—Booklet illustrated in color describes how Du Pont color conditioning puts color to work for you. Many ideas on safety brought out which color can aid.—E. I. DU PONT DE NEMOURS & CO., INC., Finishes Div., Wilmington 98, Delaware.

137. PUMPS AND COMPRESSORS—Bulletin QP-11 presents the standard types of Gardner-Denver air compressors, centrifugal pumps, steam and power reciprocating pumps in a brief and comprehensive manner to enable the prospective user to select the size and type for specific needs.—GARDNER-DENVER CO., Quincy, Ill.

138. METAL CONVEYOR BELTS—Recent catalog describes and illustrates Ashworth's entire range of manufacture, including the new flat wire belt design and application, alone with their woven wire constructions and positive drive chain edge belts.—ASHWORTH BROS., INC., Metal Products Div., Fall River, Mass.

139. STEEL SHOP EQUIPMENT—Write for profusely illustrated Hallowell folder describing line of shop desks, tool stands and carriers, cabinets, etc., adaptable to a wide range of uses.—STANDARD PRESSED STEEL CO., Box 582, Jenkintown, Pa.

145. FUNCTIONAL GLASS BLOCK DATA—Folder shows in detail daylighting function of Light-directing and Light-diffusing Functional Glass Blocks.—PITTSBURGH CORNING CORP., 307 4th Ave., Pittsburgh 22, Pa.

149. ELECTRIC AUTOMATIC LEVER CONTROL—Bulletin F-4432 illustrates and describes Barber-Colman Automatic Electric Lever Control designed to regulate the level of solutions commonly used by industry. Ease of installation is emphasized.—BARBER-COLMAN CO., Rockford, Ill.

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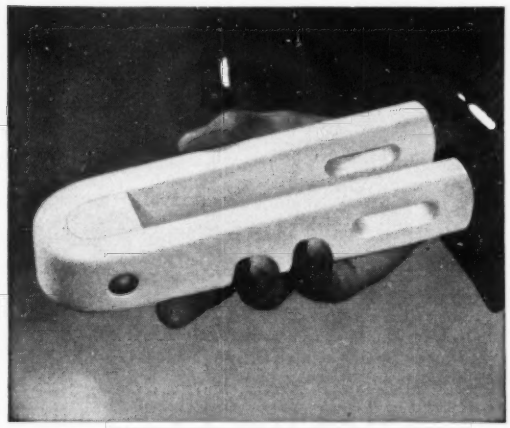

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150. RIHCO HUMIDIFIERS AND COOLING SYSTEMS—Bulletin describes new atomizers with construction lessening air consumption in humidifier systems, evaporative cooling systems.—ALDRICH MACHINE WORKS, Greenwood, S. C.

151. INDUSTRIAL BRUSHES—Illustrated booklet of industrial brushes featuring textile usage on shears, printing machines—also flock, raising and cylinder brushes.—M. W. JENKINS SONS, INC., 444 Pompton Ave., Cedar Grove, N. J.

153. LAMINATED TEXTILE PLASTICS—Booklet by Synthane Corporation shows variety, application, and advantages of laminated plastic parts and supplies for the textile industry. Write: SYNTHANE CORPORATION, Textile Division, Oaks, Penna.

154. AIR CONDITIONING FOR THE TEXTILE INDUSTRY—Booklet shows advantages of air conditioned mills in better products and more efficient workers, and gives values of White & Co. air conditioning in particular—WHITE & CO., INC., 1440 S. Tryon St., P. O. Box 533, Charlotte, N. C.

155. DUCTLESS AIR CONDITIONING—24-page illustrated Catalog No. 2 on Ameo humidification and ductless evaporative cooling, along with other Ameo humidification devices. Contains relative humidity tables and textile regains.—AMERICAN MOISTENING CO., Providence, R. I.

158. FLOATING BOTTOM ROVING TRUCK—Booklet by Excel Textile Supply shows advantages of roving truck with automatically adjusted bottom. Eliminates reaching over into truck by keeping load level within easy reach of operator.—EXCEL TEXTILE SUPPLY CO., Lee Ave., Lincolnton, N. C.

162. MODERN METHODS OF TEXTILE FLOOR MAINTENANCE—Illustrated treatise on the history of floor cleaning in textile plants and a detailed description of new methods for reducing floor cleaning costs as well as preserving textile mill floors.—G. H. TENNANT COMPANY, 2530 N. Second St., Minneapolis 11, Minn.

157. MAINTENANCE—Silicone water-repellent for masonry described in data sheet XR-296-I. Properties and application of an invisible, durable, nonplugging, silicone masonry water repellent that is inexpensive and easy to apply fully discussed.—DOW CORNING CORP., Midland, Mich.

161. AUTOMATIC CLEANING EQUIPMENT—Complete booklet by American MonoRail shows working details and advantages of the Tri-Rail Cleaner, a great improvement over the original unit.—AMERICAN MONORAIL CO., 13107 Athens Ave., Cleveland 7, Ohio.

165. CLEAN, DRY, COMPRESSED AIR—8-page color illustrated bulletin thoroughly describes after-cooling, air separating, and air filtering. Also gives size and capacity of R. P. Adams equipment.—R. P. ADAMS COMPANY, INC., 216 E. Park Drive, Buffalo, New York.

167. COLOR CONDITIONING FOR INDUSTRY—Booklet describing how color is used to reduce maintenance costs, increase production, curtail fatigue, improve employee morale.—E. I. DU PONT DE NEMOURS & CO., INC., Finishes Div., Wilmington, Delaware.

169. MACHINE BRUSHES—Illustrated folder shows many types of machine brushes and describing their particular use for printing, washing, brushing, sweeping, and shearing is sent free upon request.—INDUSTRIAL BRUSH COMPANY, INC., Woodside Avenue, Little Falls, New Jersey.

173. BLOWERS AND EXHAUSTERS—Bulletin No. 3014-D describes types "E" and "RE" electric blowers and exhausters. Uses and full description of each with detail drawings.—BUFFALO FORGE CO., 490 Broadway, Buffalo 5, N. Y.

179. BETTER WAYS—Form 2020, condenser catalog of standard and special model Toledo Industrial Scales that are being used in receiving, shipping, and production operations by all industries including the textile field.—TOLEDO SCALE CO., Box 97, Toledo, Ohio.

181. AIR FILTRATION—Bulletin 234 describes and illustrates the Auto-Airmat, which is the automatic dry-type air filter. Principle of operation, performance and characteristics, construction and installation fully discussed.—AMERICAN AIR FILTER COMPANY, INC., 275 Central Ave., Louisville 8, Ky.

188. PROGRESSING-CAVITY PUMPS—A new principle in pumps. Self-priming, positive, displacement, uniform flow features discussed.—ROBBINS & MYERS, INC., Pump Div., Springfield, Ohio.

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201. V-BELT DRIVE CATALOG—This handy, pocket-sized catalog helps you make quick and easy selections of any Dayton V-Belt Drive from 1 to 1000 HP. Contains many concise, accurate drive tables, diagrams, and other important engineering data.—DAYTON RUBBER CO., Dayton, Ohio.

203. TREADED LEATHER BELTING—This 16-page booklet describes Houghton's line of patented, specially treated leather belting for all types of power transmission. Booklet includes valuable engineering and maintenance section.—E. F. HOUGHTON & CO., Philadelphia, Pa.

212. GATES TEXTILE ACCESSORIES—Handy pocket-size catalog BHM-7, fully illustrated, gives specifications of Gates textile accessories including pickers, lug straps, check straps, cone belt, eye-ner belts, harness straps, take-up roll covering, and others.—THE GATES RUBBER COMPANY, 1001 Broadway, Denver 17, Colo.

215. MOTORS FOR ROVING & SPINNING FRAMES—Booklet describes Louis-Allis soft-start textile motors. Gives charts showing speed torque curves; illustrating that a standard motor has too much standard Torque and too rapid acceleration.—THE LOUIS-ALLIS COMPANY, Milwaukee 7, Wisconsin.

218. BALL BEARINGS FOR TEXTILE MACHINERY—A 40-page catalog illustrating Fafnir Ball Bearing units for replacement or new applications in all phases of textile processing.—THE FAFNIR BEARING CO., New Britain, Conn.

221. OILER MANUAL—Highly informative and helpful manual explains in detail the proper application of Trico, Visible, Automatic Oilers to various bearing surfaces. Construction information and valuable suggestions.—TRICO FUSE MANUFACTURING CO., 2848 N. 5th St., Milwaukee 12, Wisc.

225. COTTON CARD DRIVES—Booklet B-4596 which describes Westinghouse individual cotton card drives. Through the proper design of card motors by Westinghouse, individual drive is now practical and the booklet gives full information.—WESTINGHOUSE ELECTRIC CORPORATION, P. O. Box 868, Pittsburgh 30, Pa.

227. WOOLEN AND WORSTED MILL ELECTRICAL EQUIPMENT—Booklet by Westinghouse follows processes through the mill and shows application and advantages of Westinghouse equipment. Write for B-4695—WESTINGHOUSE ELECTRIC CORP., Box 2099, Pittsburgh 30, Pennsylvania.

229. DODGE GENERAL POWER TRANSMISSION MACHINERY—Catalog describes various types of power transmission apparatus by Dodge. Gives specifications, sizes, applications, and prices. Very comprehensive.—DODGE MANUFACTURING CORP., Mishawaka, Indiana.

233. HEAT RESISTING LUBRICANT—Descriptive pamphlet on Ben Boy High Heat Resisting Lubricant for use in any bearing using excessive amounts of oil or grease or frequent bearing failures.—GEORGIA-CAROLINA OIL CO., 1403 Sixth St., Macon, Ga.

235. JOHNSON LEDALOYL BEARING BRONZE—Illustrated booklet telling the complete story of Johnson Ledaloyl Bronze, the newest development in self-lubricated bronze for textile bearings and bushings.—JOHNSON BRONZE COMPANY, New Castle, Pa.

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239. **LICKERIN AND DOFFER BELTS**—Brochure and full information on Lickerin and Doffer belts supplied by—TON-TEX CORPORATION, 16 West 61st St., New York 23, N. Y.

253. **TEXTILE LUBRICATION**—"Lubrication" a magazine published by the Texas Co. is available. Shows methods and means of lubricating chain drives in very comprehensive form. Write—THE TEXAS CO., 135 East 42nd St., New York 17, N. Y.

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262. **SMALL PRECISION METAL PARTS**—Catalog by Torrington Company describes many special precision metal parts made by its Specialties Division. Write—THE TORRINGTON COMPANY, Specialties Division, 500 Field Street, Torrington, Connecticut.

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266. **SILICONE LUBRICATION**—Bulletin 22-IDC describes properties of Silicone greases used in motors at high speeds and temperatures, on oven conveyors, tenter frames, can dryers, etc. Decrease by 10 to 1 in re-lubrication requirements described.—DOW-CORNING CORP., Midland, Mich.

227. **SPECIAL TEXTILE MOTORS**—Bulletin 51R6055A describes special features of "Quick-Clean" motors, including discussion on free air flow, pre-lubricated bearings, rigid cast iron frame and double insulation.—ALLIS-CHALMERS MFG. CO., Milwaukee, Wisc.

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321. **RED-RAY BURNERS**—Bulletin describing use of Red-Ray Burners in preheating and partial drying to increase capacity of frame.—RED-RAY MFG. CO., 445 W 45th St., New York, N. Y.

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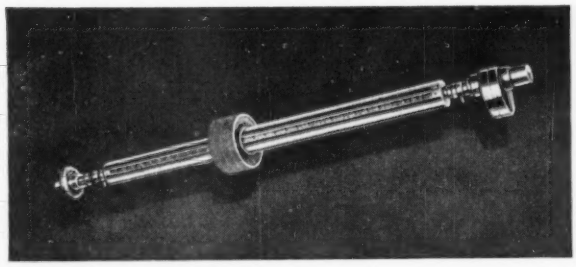

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422. MODERN TEXTILE ROLL COVERING—Illustrated booklet on roll covering problems with charts on correct usages. Also data on Acetex long draft aprons.—ARMSTRONG CORK CO., Industrial Division, TEXTILE PRODUCTS SEC., Lancaster, Pa.

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446. WINDING MACHINES — Principles and Practices is the title of Bulletin No. 339, Part 2 on the No. 44 Roto-Coner is profusely illustrated with exploded view drawings with charts and tables relative to drum winders.—UNIVERSAL WINDING CO., Providence, R. I.

447. CONE WINDER—Form A95 describes the Foster Model 102 winder which produces the Foster knitting cone for spun yarns, warping cones and tubes for dyeing and twister supply.—FOSTER MACHINE COMPANY, Westfield, Mass.

453. EVENNESS TESTER—Folder explaining how this Tester takes the guess out of quality control and each processing step from carding through spinning.—USTER CORPORATION, Charlotte, N. C.

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455. PIN DRAFTS—Catalog describing the use and features of the machine, what it can do to cut costs in the processing of natural and synthetic yarns, along with specifications and installation data.—WARNER & SWASEY CO., 5701 Carnegie Ave., Cleveland, Ohio.

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459. TENSION CONTROLS — Folder describing tension compensation and automatic tension controls. Three models—Standard, Warp, and Double Disc fully described with specific application.—WALTER KIDDE & CO., INC., Belleville 9, N. Y.

461. PRECISE WIND MACHINE—Form A-92 describes the Foster Model 75 widely used for winding straight or pineapple cones and tubes of rayon, nylon and other filament yarns.—FOSTER MACHINE COMPANY, Westfield, Mass.

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469. SHORT CUT TO STAPLE FIBER SPINNING—Color brochure shows the ten steps in operation of the Turbo Tow Stapler, gives technical details and diagrams. Write—TURBO MACHINE COMPANY Lansdale, Pa.

470. TENSION CONTROL IN TEXTILES—Booklet describes many applications and advantages of Link Engineering's "Lod-Caps." Well-illustrated with diagrams and pictures, it gives specifications and capacities. Write—LINK ENGINEERING COMPANY, 13843 Elmira Avenue, Dept. D, Detroit 27 Michigan.

471. FACTS ABOUT YOUR FLYERS AND SPINDLES—Booklet by Ideal Machine Shops shows how smooth Flyer and Spindle operation can help produce higher and more efficient output, good quality yarn, minimum wear, and larger bobbins. Write—IDEAL MACHINE SHOPS, Bessemer City, North Carolina.

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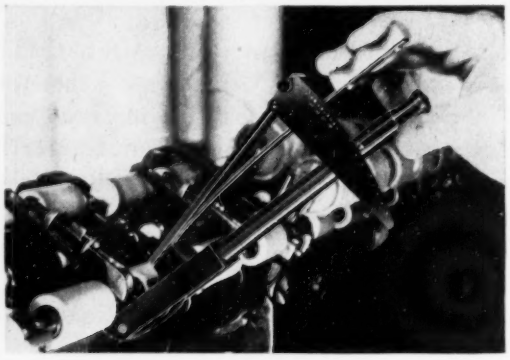

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518. NIAGARA TWIST-SETTER—Folder describing the revolutionary Niagara Twist-Setter which has no moving parts. This yarn is sprayed from all sides to afford maximum economy.—SEYDEL-WOOLLEY & CO., 748 Rice St., Atlanta, Ga.

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536. HOMOGENIZER IMPROVES SLASHING—Pamphlet by Manton-Gaulin Manufacturing Company shows how mechanical conversion of size by the Gaulin method produces better size. Gives installation pictures and specifications. Write—MANTON-GAULIN MANUFACTURING COMPANY, INC., Everett, Massachusetts, U. S. A.

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DYEING, FINISHING CLOTH ROOM

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632. LUG STRAP WASHERS—Series 1-C illustrated bulletin detailing right and wrong application and use of washers.—H. H. JACOBS NORTHERN DIV., Danielson, Conn.

633. TWO BURNER VERTICAL SINGER—Described as consisting of adjustable tension device, air guiders (optional), guide rolls to guide cloth between the burners, and solenoid-controlled pneumatic cloth deflector to move cloth from burners when stopping and throws in electrically when starting. Pictured and fully discussed.—BIRCH BROTHERS, INC., 32 Kent St., Somerville 43, Mass.

641. PACKAGE DYEING—Machines for dyeing, extracting, and drying yarn in package and on beams described in illustrated booklet on the theory of package dyeing and equipment for this process.—SMITH, DRUM & CO., Philadelphia 33, Pa.

651. IMPROVED SHEARING OPERATIONS—The Slack Selvage Eliminator Bulletin describes this Mount Hope machine and discusses the speed-up in shearing operation and the elimination of cutting of the material due to slack selvages.—MOUNT HOPE MACHINERY COMPANY, 15 Fifth St., Taunton, Mass.

DYESTUFFS, CHEMICALS, SOAPS . . .

700. COTTON FINISHING OILS—New booklet by Twitchell devoted to finishing Sanforized Fabrics contains such specific data as re-wetting speed, imparted softness, resistance to yellowing, and "balance" of these properties. Write—EMERY INDUSTRIES, INC., Dept. 5, Carew Tower, Cincinnati 2, Ohio.

702. DEFOAMERS—Bulletin AA-2 lists uses and properties of Antifoam A, which can be effectively used at 10 to 200 ppm in most industrial applications. Emulsions available, improve dispersability in aqueous systems.—DOW-CORNING CORP., Midland, Mich.

705. THEORETICAL AND APPLIED SILK-SOAKING—Attractive 23-page booklet outlining methods of silk-soaking and outlining investigation on the soaking, back-winding and degumming of silk.—HART PRODUCTS CORP., 1440 Broadway, New York 18, N. Y.

706. RHONITE RESINS—Booklet describes the Rhonite Resins as being developed to impart handle to fabrics ranging from stiffness through full resiliency to silky suppleness, depending on the demand of the season. Full information and uses given.—ROHM & HAAS COMPANY, Washington Square, Philadelphia, Pa.

708. CAUSTIC SODA BOOKLET—Deals with manufacture, its properties, methods of handling and storage, technical data, etc.—ALKALI SALES DEPT., THE DOW CHEMICAL CO., Midland, Mich.

711. PIXOL—Recommended as a leveling and penetrating agent, especially for the dyeing of wool, described as being useful as a finish for worsted piece goods. Prevents bronziness in sulphur dyeing on cotton.—AMERICAN ANILINE PRODUCTS, INC., 50 Union Square, New York, N. Y.

713. LIOVATINE ED—Vat dyeing assistant increasing penetration and level dyeings with maximum yield of color.—SANDOZ CHEMICAL WORKS, 61 Van Dam St., New York City.

714. NEW SODA ASH BULLETIN—64-page edition contains both new material and revisions of previously used data covering the subject. Ask for Bulletin No. 5.—SOLVAY SALES DIV., 40 Rector St., New York 6, N. Y.

715. AQUAROL AND ARKANSAS PRODUCTS—Bulletin on Aquarol water repellent finish with method of preparing bath; also on other Arkansas products for cotton, wool, silk and yarn, hosiery processing.—ARKANSAS CO., INC., Newark, N. J.

716. WIDE RANGE SCOURING AND WETTING AGENT—4-page folder describing Houghton's concentrated, non-ionic, synthetic detergent and wetting agent, Carfak 1300, usable over entire pH range for efficient scouring and wetting.—E. F. HOUGHTON & CO., Philadelphia 33, Pa.

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728. UNIQUE YARN AND DYEING SERVICE—Booklet by Franklin Process tells why Franklin Process Yarn Dyeing Service is one of the top package yarn dyeing services. Also includes table showing relative fastness of dyestuffs used on various fibers.

729. STATIC AND STATIC CONTROL—Papers deal with historical background of static electricity and the problems caused by it along with methods of controlling them. Write—DEXTER CHEMICAL CORP., 319 Edgewater Road, New York 59, N. Y.

745. RAPIDASE FOR DESIZING—Bulletin explaining in detail the properties and characteristics of Rapidase.—WALLERSTEIN CO., INC., 180 Madison Avenue, New York 16, N. Y.

749. WATER SOLUBLE GUMS—Booklet giving the origin, gathering, marketing and uses of water soluble gums. This booklet No. 23 is beautifully illustrated, and is one of the few treatises on the subject. —JACQUES WOLF & CO., Passaic, N. J.

753. TRITON X-100—Booklet available describing this highly concentrated detergent and wetting agent. Main uses fully discussed and chemical properties brought out.—ROHM & HAAS COMPANY, Philadelphia 5, Pa.

762. ONYX TECHNICAL DATA SHEETS—Two new data sheets describing the use, advantages, and applications of Xyno Resins S 60 and Xyno Resin 902. —ONYX OIL & CHEMICAL COMPANY, Jersey City 2, N. J.

765. HOSIERY FINISHES AND FORMULAS—Attractive new booklet describing the Amalgamated line of hosiery finishes and giving numerous finishing formulas.—AMALGAMATED CHEMICAL CORPORATION, Philadelphia 34, Pa.

766. DU PONT PEROXIDE BLEACHING SYSTEMS—New book illustrating and describing this continuous peroxide bleach system. Layouts and other information included.—E. I. DU PONT DE NEMOURS & CO., ELECTROCHEMICAL DEPT., Wilmington, Del.

769. SURFACE TENSION DEPRESSANT — The booklet, "Mercerizing and Alkamerce—The Ideal Dry" which can be used as a wetting agent; a dye leveling agent, a penetrant in package dyeing.—HART PRODUCTS CORP., 1440 Broadway, New York, N. Y.

774. ROYCE TEXTILE CHEMICALS—This booklet briefly describes the leading Royce products for textile processing, printing, dyeing and finishing.— ROYCE CHEMICAL COMPANY, Carlton Hill, N. J.

KNITTING . . .

801. THE WILDMAN SINGLEHEAD FULL-FASHIONED HOSIERY MACHINE—Literature on request from the WILDMAN MFG. CO., Full-Fashioned Division, Norristown, Pa.

805. REINER CREELS—Catalog describing these single type, magazine, and truck creels for all requirements in the knitting and weaving industry.— ROBERT REINER INC., Weehawken, N. J.

818. FORGED HEAD ALUMINUM BEAMS—Bulletin 49-A shows new beam capable of holding high yardage of nylon and rubber warps, with specifications. Also describes permanent mold aluminum tricot and section beams.—MILTON MACHINE WORKS, INC., Milton, Pa.

822. HIGH SPEED JERSEY CIRCULAR MACHINE—Booklet describing Supreme's line of high production, body-size and large diameter jersey machine, Model MJ, for underwear and outerwear.— SUPREME KNITTING MACHINE CO., 105 Johnson Ave., Brooklyn 6, N. Y.

828. THE KIDDE KNITTER—Bulletin describing this newest in Raschel-type warp knitting machines and higher production attained with it.—KIDDE MANUFACTURING CO., INC., Farrand St., Bloomfield, N. J.

831. CIRCULAR KNITTING MACHINES—Brochure pictures and describes the products which can be made on the Brinton small diameter circular knitting machines. Examples of the variety of products which can be made are pictured and the machine described.—H. BRINTON COMPANY, Kensington Ave. and "M" St., Philadelphia, Pa.

SEWING MACHINES . . .

916. THE SUPERLOCK—Bulletin 828 describing and illustrating the W & G Superlock overseaming machine.—WILLCOX & GIBBS SEWING MACHINE CO., 714 W. 39th St., New York 18, N. Y.

924. BUTT-TACKING SEWING MACHINE—Booklet describes an operating installation of the Merrow single thread butt-tacking sewing machine. Gives performance data, and advantages of butt-tacking. Write—THE MERROW MACHINE COMPANY, 28 Laurel Street, Hartford, Connecticut.

MATERIALS HANDLING . . .

1003. CASTERS AND WHEELS—192 pages, describing casters and wheels suitable for all types of industrial applications. Every mechanical engineer and purchasing agent should have this.—DARNELL CORP., LTD., Long Beach 4, Calif.

1004. PITTSBURGH COLLAPSIBLE CARGO-TAINERS—Stacked they lock in place and permit visible inventory; collapsed they nest in small area. Base permits entry by all types of lift trucks. Write for brochure MH-15—PITTSBURGH STEEL PRODUCTS COMPANY, Pittsburgh 30, Pa.

1006. LANE CANVAS BASKETS—16-page illustrated booklet describing the Lane line of canvas baskets for textile use.—W. T. LANE & BROTHERS, Poughkeepsie, N. Y.

1007. OVERHEAD HANDLING EQUIPMENT—56 pages of illustrations showing successful applications of monorail systems to meet every kind of handling problem.—THE AMERICAN MONORAIL CO., 13106 Athens Ave., Cleveland 7, Ohio.

1008. CASTERS AND WHEELS—An illustrated booklet with complete specifications showing a complete assortment of Cotton Textile Casters.—THE COLSON CORP., Elyria, Ohio.

1010. CONVEYOR KEY BOOK—A guide to production "step-ups" now possible with modern conveying. Shows time-and-effort savings. Well illustrated with photos showing plant layouts and sketches showing where, how and why different types of conveyors are used for maximum results.—LOGAN CO., 1115 Franklin St., Louisville, Ky.

1011. TEXTILE TRUCKS—Booklet describing doff boxes, frames and trucks, yarn, waste, platforms, conditioning, steep lap, fiber, utility trucks, etc. Uses and description.—EXCEL TEXTILE SUPPLY CO., Lincolnton, N. C.

1013. "A STORY OF TRACTOR TOOLS AND THEIR USE"—Comprehensive illustrated guide effectively present in cartoon-style the manw principal uses for this type of equipment.—HYSTER CO., 2903 N.E., Clackamas St., Portland 8, Ore.

1014. FORK TRUCK OF THE FUTURE—Clark's new X-70 Fork Truck is featured in the new and current edition of their external house organ, the "Material Handling News." Schematic sketches illustrate special details of the new stream-lined truck. Write—CLARK EQUIPMENT CO., Industrial Truck Div., Battle Creek, Michigan.

1025. ELECTRIC HOISTS AND CRANES—Booklets describing a complete line of Electric Overhead, Cab and Floor-Operated Traveling Cranes, and a similar line of Electric Hoists. All fully discussed with pictures and engineering diagrams.—SHEPARD NILES CRANE & HOIST CORP., Montour Falls, N. Y.

1027. SINGLE-BEAM CRANES—Bulletin No. 130 describing and illustrating the single beam type of overhead traveling crane.—SHEPARD NILES CRANE AND HOIST CORP., Montour Falls, N. Y.

1029. ELECTRICAL INSULATING MATERIALS—Bulletin GF-50 describes 5 high-strength plastics: Diamond Vulcanized Fiber; Vulcoid, A C-D dielectric material; Dilecto, a laminated thermosetting plastic; Celoron, a fabric-base molded plastic; and Micabond, mica in most usable form. Full information on each in forms available. — CONTINENTAL-DIAMOND FIBRE COMPANY, Newark, Dela.

1031.—MOTOR-DRIVEN TROLLEY HOISTS—12-page illustrated booklet describing Robbins & Myers motor-driven trolley hoists. Capacities from 1000 to 20,000 pounds. Bulletin 805-A.—ROBBINS & MYERS INC., Hoist & Chain Div., Springfield, Ohio.

MISCELLANEOUS . . .

1101. AUTOMATIC BOBBIN REFINISHER—A descriptive bulletin illustrating and describing method of refinishing throwing bobbins on a production schedule.—J. M. NASH COMPANY, 2360 N. 30th St., Milwaukee, Wis.

1102. BALING PRESSES—An illustrated folder describing this manufacturer's complete line of balers for all materials. Both Downstroke and Upstroke models.—ECONOMY BALER CO., Ann Arbor, Mich.

1103. UNBRAKO SCREWS—Illustrated 16-page booklet No. 570 gives data on Unbrako hollow set screws, with knurled point, self-locking features. Includes miscellaneous screw and locking nut data.— STANDARD PRESSED STEEL CO., Jenkintown, Pa.

1107. AUTOMATIC QUILL POLISHER—Bulletin describes production machine for refinishing loom bobbins. Tells how quills can be kept in perfect condition at minimum labor cost.—J. M. NASH CO., 2360 N. 30th Street, Milwaukee 10, Wis.

1108. FABRICATION OF U. S. STAINLESS STEELS—136-page book covering use of stainless steel in textile equipment from cutting to cleaning. Includes corrosive-resistance tables for chemicals.— CARNEGIE - ILLINOIS STEEL CORPORATION, Pittsburgh, Penn.

1111. BRUSHES—A 26-page booklet is now available which describes and illustrates this manufacturer's line of brushes for the textile industry.— GASTONIA BRUSH COMPANY, Gastonia, N. C.

1112. THE RANDOM WEB PROCESS—Bulletin No. 101 describes the Rando-Webber and Rando-Feeder machines, and discusses the origin and development of the Random Web process which produces a non-oriented web suitable for processing into felts, wadding, heavy mats and non-woven fabrics on a continuous basis. Engineering data and cut-away diagrams.—CURLATOR CORPORATION, Textile Division, 585 Blossom Rd., Rochester, N. Y.

1119. CUTTING MACHINES—A collection of specification sheets and general descriptive matter covering cutters for thread waste, staple, fiber, etc. Complete description and uses.—TAYLOR-STILES & CO., 21 Bridge St., Riegelsville, N. J.

1115. TEXTILE WRAPPING MACHINES—Brochure describing automatic wrapping machines for various types of textile products, including the new Hayssen V-Type Underfold, most protective package made.—HAYSSEN MANUFACTURING CO., Sheboygan, Wisconsin.

1122. BALING PRESSES—Bulletins available describing this company's line of motor-driven and hydraulic baling-presses for finished-goods, textile fibers, wool, and waste of all kinds.—LOGEMANN BROTHERS CO., 3150 West Burleigh St., Milwaukee, Wis.

1123. CHROMIUM PLATING—New booklet tells how Walhard engineered hard chromium plating service works for industry. Walhard's capacity to produce, controlled quality, and economical operation are discussed along with pictures of the operations.—WALTON & LONSBURY, Attleboro, Mass.

OCTOBER, 1953

Please send, without obligation, additional information on New Equipment and booklets described (give Key numbers) .....

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Circular Sock Knitter Features Versatility

(Continued from page 129)

tor. A 1/3 hp motor may be used with a two-drum machine.

With the one to five jack cylinder 26-step jack in each section (total 130 steps), the steps can be selected in multiples of 26 on one or all of the four feeds with the cylinder revolving in one direction, or they can be selected on all four feeds with the cylinder turning in either direction or oscillating.

The feed stations can carry a maximum of five yarns per feed for a total of 20 colors. The take-up mechanism is divided into units that can be applied to each of the yarns used. The take-up mechanism also serves as contact for the stop motion system, stopping the machine if any yarn should break. The machine is fully stop-motion protected.

The take-up mechanism control permits the use of shear knives and trapping devices for holding the yarn after it is cut. These shearing devices are provided for each of the feeds used, thereby eliminating the need for trimming out yarns after yarn changes. The shearing mechanisms are provided with stop switches which stop the machine if a shear blade fails to cut the yarn. This feature prevents loading up and subsequent needle breakage.

The sinker cap or sinker control system is designed to operate without the usual oscillating motion of the cap.

The machine is constructed to knit heel and toe pockets or patterns in diamonds or varied gore lines without narrowing and widening picks.

As each stitch is doffed from the latch needle by a jack system, the needle butts travel within a guarded path at all times, eliminating needle butt breakage due to switch or other control cams operating on the needle butts.

The machine will be made to customer specifications in any gauge from 12 to 75.

The jack cylinder (if 4¾" dia) can carry a knitting cylinder 3" to 4¾" in diameter, and these can be converted from one diameter to another at little cost — 18-20 hours of a fixer's time. This change does not require changing the jack mechanism.

These units are designed for attaching a dial for making an automatic rib top, also wraphead for wrapping reinforcing yarn on needles for color effects.

Keller Machine Co., Athens, Ga.

For additional data, request item K-303, using Handy Return Card on page 208.

NEW Equipment AND MATERIALS

Other items are described on pages 127 and 129

Each Spindle Has Its Own Hopper on Simplified Filling Winder

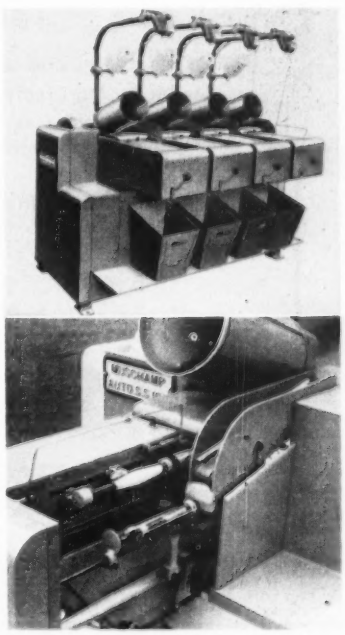
Design of a new filling winder departs from the usual system of having one large hopper for empty bobbins serving a number of spindles. Instead each spindle has its own hopper designed to contain from 20 Draper type bobbins to about 60 of the smaller bobbins commonly used for synthetic winding.

The hopper is a canister-like container on the top of each spindle box, and all that is necessary to replenish it is for the operative to throw a handful of bobbins into the hopper. It does not matter if all the bobbins are not the same way up — the hopper will not feed a bobbin to the winding point unless it is facing the right way.

During the time when winding is actually taking place the hopper is stationary; immediately after the full bobbin has been ejected, an empty bobbin is placed in the winding position, winding starts and at the same time the hopper starts to rotate. An empty bobbin is released through a delivery slot on the side of the hopper onto a conveyor which delivers it to a specially designed holder in which it is held in readiness for presentation to the winding position. This holder acts also as a switch to control the movement of the hopper; until a bobbin is resting in the holder the hopper will continue to rotate, thus assuring that there is always an empty bobbin in position when needed.

The feeler device incorporates the best features of both contact feeler and mechanical builder motions in controlling the diameter and shape of the filling bobbin. If during winding the feeler wheel loses contact with the yarn on the bobbin, the build is still controlled by the mechanical motion to produce a uniform bobbin throughout.

The design of the interior of the spindle box has been considerably simplified. The conventional type grooved cam has been eliminated and replaced by a new design of three-point side face cam which operates



Upper photo is overall view of the new Foster-Muschamp filling winder. Below is close-up showing spindle, hopper, and empty quill conveyor.

on the outside of the spindle box. This cam requires no lubrication and reduced considerably the number of working parts required in the machine.

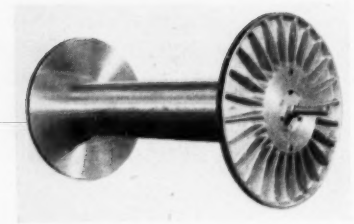
Drive to the spindle gives a shock-proof, gradual build-up of speed, thus tending to reduce end breakages at the moment of changeover from full to empty bobbin.

Foster Machine Co., Westfield, Mass.

For additional data, request item J-116, using Handy Return Card on page 208.

Aluminum Beam Produced Exclusively for Nylon Yarn

An aluminum section beam produced primarily for nylon includes many features that make it of particular interest to the industry. It is available in 30" and 32" head diameters, has an extra heavy center hub construction with 24 reinforcing ribs, a minimum ½" high strength aluminum barrel, and is adaptable for use with all current makes of warpers. All surfaces are rust-proof and snag-free, and the unit is designed to maintain a permanent running balance.



Hayes' aluminum section beam for nylon yarn.

In a test made by the Engineering Department of Swarthmore College, this beam withstood a load of 263,000 pounds. With continued loading the head casting cracked, and even then the beam still held a load of 80,000 pounds, which is considered sufficient for removal of nylon yarn without loss of material. There was no failure of the business threads holding the head to the barrel.

Hayes Industries, Inc., Jackson, Mich.

For additional data, request item J-108, using Handy Return Card on page 208.

Double Pass Boiler for Power or Heating Can Be Furnished as Package

Development of a line of "Double Pass" boilers adaptable to the textile and every other type of industry requiring steam up to 150 psi for power and/or heating, has been announced.

Available in sizes ranging from 36 hp to 153 hp, S.B.I. rating, with pressure to 150 psi, the compact units are designed for either coal, gas or oil firing, and can be furnished complete as a package unit.

Lucey Boiler & Mfg. Corp., Chattanooga, Tenn.

For additional data, request item J-123, using Handy Return Card on page 208.

Fork-Lift Trucks with Torque Converter Drive

The production of a transmission that makes driving a gas-powered fork-lift truck as easy as driving the family automobile has been announced.

Known as the Hydratork Drive, the new automatic transmission makes it possible to operate a gas-powered fork-lift truck with the same three simple controls used to operate an automobile — namely, an accelerator, a brake pedal, and a forward-reverse selector lever located on the steering column. The design of the unit eliminates the need for a gear shift for high and low gears and a clutch and clutch pedal.

One of the outstanding advantages of the Hydratork Drive is that it eliminates gear clashing during gear engagement. As a result, a major savings can be effected because of reduced maintenance requirement. Additional advantages of the Hydratork over other transmissions include smoother acceleration, more positive driver control at all times, quick effortless changeover from forward to reverse motion and vice-versa, and controlled "inching" ability.

Clark Equipment Co., Battle Creek, Mich.

For additional data, request item J-129, using Handy Return Card on page 208.

Are You Getting a Fair Day's Work for a Fair Day's Pay?

As Production Engineers we specialize in the utilization of

LABOR — EQUIPMENT — MATERIAL

Our list of clients reads like the Blue Book of American Manufacture, and in our files are many expressions as to our service and results accomplished, like the following:

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30 CAMDEN ROAD
ATLANTA, GA.

Fire Extinguisher Label Pictures What to Do and How to Do It

Pictorial operating instruction labels portraying clearly what to do and how to do it are now provided on Alfco Foamite and Soda-Acid fire extinguishers.

They occupy space formerly used for the crowded, hard-to-read recharge instructions and should completely eliminate any reason for delay or confusion in the correct use of these devices by an inexperienced operator. Even a person who cannot read can properly operate the extinguishers by observing the action sketches.

The labels are fused into the metal and cannot be removed.

American-LaFrance-Foamite Corp., Elmira, N. Y.

For additional data, request item J-128, using Handy Return Card on page 208.

Motorized sweeper by Tennant.

New Sweeper Cleans Two Acres an Hour

One man can tilt and dump a fully loaded dirt hopper in 30 seconds on a recently developed new power sweeper. With a few turns of a ratchet-type lever, the operator can empty the dirt pan of loads weighing up to 700 lb.

Capable of sweeping over 100,000 sq ft per hour, this machine is specially suited for sweeping cotton storage areas, opening rooms, textile warehouses, sidewalks, etc. It sweeps a 36" path; picks up lint, yarns, dust, and dirt at speeds up to 6 mph. A rotary 21" side-brush allows cleaning flush with machines, pallets, skids, baseboards and walls and increases sweeping path to 48".

Sweeping with this machine is practically a dust-free operation.

This sweeper is designed for easy handling in congested areas. Automotive-type steering (through rear wheels) permits turns in a 5-ft radius. You push a pedal with your toe to go forward; press back with your heel to back up. There are no gears to shift. A built-in emergency brake permits parking on ramps and inclines.

G. H. Tennant Company, 2524 North Second Street, Minneapolis 11, Minnesota.

For additional data, request item J-122, using Handy Return Card on page 208.

Jet Blower Keeps Filling Fork Well Lint-Free

Filling fork wells may now be kept lint-free with a Jet Blower which sends a blast of compressed air through the well at each pick of the loom. Previously, the operator had to stop the loom and brush out the well once each shift; and on some classes of goods, twice each shift. At least 30 picks are lost each time the loom is stopped for this purpose.

The device consists of a piston and

CROMPTON RICHMOND COMPANY INCORPORATED FACTORS

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"Work For The Customer"

In every department of every Crompton plant there is a placard which says, "Work For The Customer." It is the main creed instilled in the mill workers, clerical staffs and all echelons of our executives.

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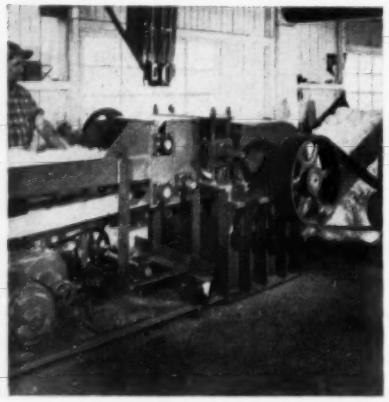
CROMPTON-RICHMOND CO., INC.
1071 Avenue of the Americas, New York 18, N. Y.

A TAYLOR-STILES THREAD WASTE CUTTER—

designed especially to cut synthetic fiber waste.



Here is a thread waste cutter that overcomes the tendency of fine fibers like nylon, orlon, dacron, and other synthetics to get out of control during the cutting operation.

The feed rolls are shaped to direct the fibers to the middle of the cutting element, bring them close to the knives, and hold them away from the bearings of all parts of the machine.

Bearings are placed all outside the tapered feed box and bearings of the knife cylinder are also shielded to prevent fibers from being caught and winding into them.

The cutting element is so shaped as to receive cuttings and discharge them promptly without jamming and the fanning action tends to hold the material in position instead of blowing away from the knives.

These and other special features make these the most efficient thread waste cutters for any fibers you may have to cut.

Write for full description of the Taylor-Stiles thread waste cutter for your particular use.

TAYLOR-STILES and Company
CUTTING MACHINES & KNIVES

204 BRIDGE STREET
RIEGELSVILLE, NEW JERSEY

NEW Equipment AND MATERIALS

brass cylinder with intake and exhaust valves, mounted on the bottom of the lay sword; and a bracket attached to the loom frame. A copper tube runs from the cylinder to the filling fork well, and is bent around the filling fork. The end of the tube is closed. Several small holes are drilled around the tube, parallel to the filling fork.

At each forward movement of the lay, air is sucked into the cylinder through the intake valve. About 35 pounds pressure is built up. As the lay moves backward, the piston presses against the bracket mounted on the loom frame, forcing a jet of compressed air through the copper tube into the filling well and blowing out the fly. The intake valve on the cylinder prevents air from being sucked back through the tube from the filling well.

The blower, which can be used with either side fork or center fork filling stop motions, eliminates entirely the problem of the filling fork well becoming choked up with fly, with consequent failure of the stop motion. It will also blow wild ends of filling to the floor, eliminating a sizable percentage of jerked-in filling. The device should increase production and improve quality.

Only minimum maintenance is re-

Bright, Fast Colors for 3-D Printing

Bright, fast colors that can be efficiently printed in three dimensions are now available.

Metro Dyestuff Corp. has announced the conclusion of an exclusive agreement with Plastex G.m.b.H. of Krefeld, Germany, an affiliate of Dornbusch Machinery Co. of the same town, covering the exploitation in the United States, Canada, Cuba, and Mexico of the inventions covering printing colors for simultaneously embossing and printing of cellulosic fabrics.

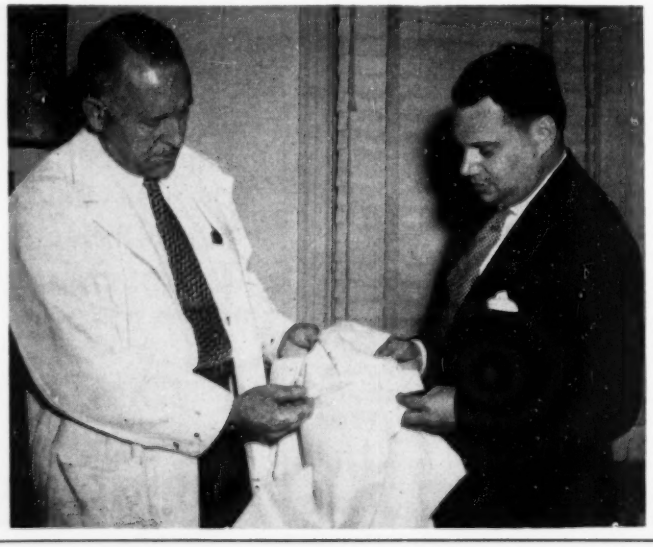
The high-temperature (385 to 450 F) emboss printing inks, to be marketed under the name "Emboprint," are fast to dry cleaning, laundering, and crocking.

Numbered tags will be issued by Metro to identify Embroprint fabrics. The number will enable quality control laboratories of Metro to follow through for the protection of its customers.

Metro-Atlantic, Inc., Centredale, R. I. (sales agent for Metro Dyestuff Corp.)

For additional data, request item J-304, using Handy Return Card on page 208.

Dr. Harry Grimmel (left), president of Metro Dyestuff Corp., and Ernest Nathan, chairman of the board of Metro-Atlantic, examine a fabric printed in three dimensions with the new "Embroprint" colors.



quired, principally replacement of springs and washers. It should be inspected annually, when the warp is out.

Brame Textile Machine Co., P. O. Box 943, Greensboro, N. C.

For additional data, request item J-101, using Handy Return Card on page 208.

Heavyweight Cellophane for Textile Packaging

A new heavyweight, extra-durable film suited to the shelf and storage conditions of textiles retailing, is said to be the strongest cellophane ever made.

This film, known as Sylvania 600 MS-3 cellophane, is now being used for several different textiles packages, including those for fitted sheets, flat sheets, and bedspreads. It performs well in both machine and hand applications, and shipments of merchandise packaged with the heavy cellophane have arrived in excellent condition.

Like all cellophanes, the film takes printing easily and brilliantly. It retains the complete transparency characteristic of cellophane.

Although the cellophane was designed primarily for packaging such large or weighty textiles as sheets, table cloths, bedspreads, pillows, blankets, towels, etc., it may also be used with equal effectiveness to give luxurious appearance and durability to packages for smaller items.

Sylvania Div., American Viscose Corp., Marcus Hook, Pa.

For additional data, request item J-102, using Handy Return Card on page 208.

Oils Aid Processing of Synthetic Fibers and Yarns

Regent Coning Oil and Spinol RL were specifically developed for application to the new synthetic fibers.

Regent Coning Oil is a self-emulsifying, anionic coning oil with built-in anti-static properties for treating Orlon, Dacron, nylon, Acrilan and acetate. The product improves running and knitting properties and may be applied to filament or spun yarns either as received or as an emulsion from conventional troughs on winders. It contains no mineral oil and washes out easily in a regular scour.

Spinol RL is a blended anionic, non-mineral oil compound especially prepared for spinning and knitting Dacron, Orlon, nylon, and acetate fibers and blends. It is designed to give lubrication as well as anti-static control. The manufacturer recommends it as a stock lubricant for use prior to spinning and as a yarn lubricant prior to knitting. Spinol RL may be used as received or in a water solution. As a spinning oil it is applied from spray apparatus, and when used as a lubricant it is applied from a trough on winders. Easily removed in regular scour. Has no adverse effect in dyebath or on shades.

Laurel Soap Mfg. Co., Inc., Tioga, Thompson & Almond Sts., Philadelphia 34, Pa.

For additional data, request item J-121, using Handy Return Card on page 208.

Tricot Knitting Machine For Pattern Designing

A tricot knitting machine designed to develop sample patterns quickly and inexpensively is named the Samplette Tricot Machine.

It knits any pattern that can be

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FABREEKA BELTS
FABCO LOOM STRAPPING

for MAXIMUM PRODUCTION with MINIMUM DELAY . . .

FABCO LOOM STRAPPING — Designed for long life, minimum stretch and greater flexibility. Specially constructed of layers of rayon and cotton duck impregnated with rubber. In finished strapping or roll lengths.

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P. O. Box 1661, Spartanburg, S. C.
Sales Representatives

ROBERT S. BRICE
711 Arnett Blvd., Danville, Va.

JOHN T. FERGUSON
P. O. Box 486, La Grange, Ga.

FABREEKA PRODUCTS COMPANY, INC.
222-J Summer Street, Boston 10, Mass.

NEW YORK CHICAGO DETROIT SPARTANBURG PHILADELPHIA PITTSBURGH

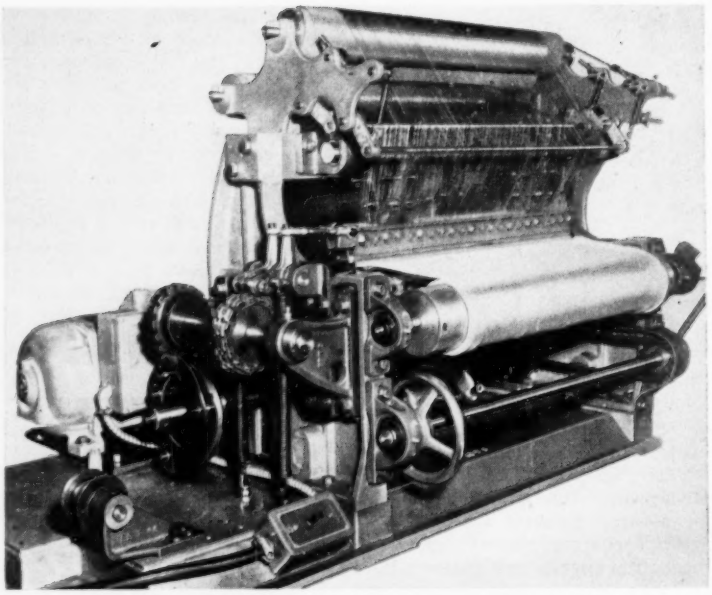
produced on a comparable full-size tricot machine from any yarn in standard use, in gauges from 14 to 32, on a 21-inch warp. The gauge may be changed at any time by replacing index buttons, guides, sinkers, and needles.

While small in overall size (3' high x 2' wide x 4' long), the machine has the rugged construction features of full-size production knitters.

The machine can be set up in a matter of minutes, and relatively small quantities of yarn are required to produce high quality samples. Pattern chain may be assembled from a minimum of 16 buttons up to any indefinite length, forming virtually limitless pattern variations easily and quickly.

Powered by a ½ hp motor, the machine may also be operated by its hand wheel. In addition, it can be equipped with a variable speed drive to reduce speed to 3 or 4 revolutions per minute, permitting step-by-step study of pattern complexes in the making.

The machine is ideally suited for pattern experimentation and training purposes, as well as producing samples for testing yarn.



Samplette tricot knitter (Bearing Products Co.).

Bearing Products Co., 3339 Lancaster Ave., Philadelphia 4, Pa.

For additional data, request item J-305, using Handy Return Card on page 208.

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. . . LIGHT in weight!
MILTON GIVES YOU TRUE DIMENSIONAL STABILITY without objectionable deflection or distortion!
it takes GOOD BEAMS to make good warps!
PROVEN IN SERVICE
warping unprecedented yardages of monofilament; fine denier, low turn nylon; and rubber yarns
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DESIGNERS — ENGINEERS — MANUFACTURERS
MILTON, PENNA.

Extended Creel for Can-Back Drawing Frames

Now available for all existing can-back drawing frames is an extended creel which keeps the cans in an orderly arrangement, reduces waste, eliminates tangles, and reduces distortion due to drag. Experience in some of the mills where this assembly is in use has shown that on carded sliver there is generally a reduction of 2% in the average variation and an increase in operating efficiency.

Advantageous with 12" cans as well as with the larger sizes, the extended creel consists of two sets of horizontal and vertical pipes supporting a set of sliver guides. The forward end of the horizontal pipe is fastened to the back plate of the drawing frame. The rear end is supported by a pipe and floor flange. The sliver guides are made of cast iron, highly polished.

The rear guide takes sliver from the last two cans in each double row, while the forward guides progressively take up the additional slivers until back sets of six ends are presented to the finger guide at the

back of the drawing frame. In the event that eight ends up are used, the sliver from the first two cans is run directly into the finger guide on the back plate.

In addition to maintaining an orderly array of the cans, the creel also creates an alley which allows the operative to easily reach the back of the drawing frame without pushing around the cans.

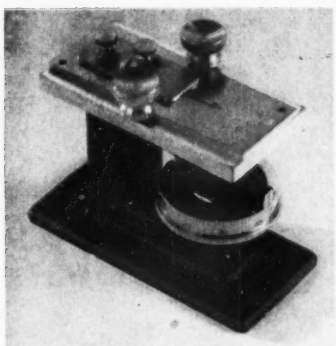
Saco-Lowell Shops, 60 Batterymarch St., Boston, Mass.

For additional data, request item J-112, using Handy Return Card on page 208.

Fiber Microtome Improved

The design of the Mico Fiber Microtome described in TEXTILE INDUSTRIES for March, 1952, has recently been improved by changing the detail of the tongue and by giving the entire top cutting plate a hard-chrome finish.

The new tongue design is much



Mico fiber microtome.

sturdier than the old and permits more rapid packing of the fibers to be examined. The hard-chrome finish on the top plate assures a smooth, hard reference surface that makes it easier for the operator when sectioning of the fibers is to be done.

Mico Instrument Co., 74 S. Trowbridge St., Cambridge 38, Mass.

For additional data, request item J-306, using Handy Return Card on page 208.

New Model Colorimeter Features Greater Versatility

Completely redesigned for greater versatility and lower cost, the Model "C" Color-Eye replaces earlier models of this instrument for industrial color measurement and comparison. A comparison colorimeter of high sensitivity and precision, Color-Eye computes logarithmically to simulate the response of eye and brain. Tristimulus type filters permit measurement under daylight or artificial sources.

The standard instrument can be furnished with either diffuse (sphere-type) or 45° normal illumination and viewing, with illuminators interchangeable if desired. Up to 15 filter combinations can be installed in one instrument including narrow-band interference-type for abridged spectrophotometry. Transmission and reflectance samples can be accommodated and surface gloss included or excluded.

New features available include forced cooling, direct reading in terms of X, Y, and Z adjusted values, dual area viewing for large and small sample areas, improved type commutator system, and optical location means for small areas. In common with all Color-Eye models, in-

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SO2
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MAY BE YOUR ANSWER!
It may be that you have use for a superior reducing or bleaching agent, antichlor, PH control or neutralizer. Our technical staff is ready to help you to produce greater efficiency and increased profits through the use of Tennessee's highest quality Sulphur Dioxide in your research, processing or production problems.
Let us send you descriptive material on Tennessee's highest quality Sulphur Dioxide (SO_2) today.
TEXTILE USES
Where the sodium hypochlorite bleaching method is used, it is desired to insure that excessive chlorine does not remain in the cloth and cause tendering. A solution of Sulphur Dioxide in water is used in a bath following the "chemic" wash to remove excess chlorine.
Liquid SO_2 is used by some textile mills to manufacture sodium hydrosulfite. The use of this sodium hydrosulfite in textile mills is for the reduction of blue indigo to the soluble form so that the dye can be impregnated into the cloth. Subsequent oxidation by air renders the dye insoluble.
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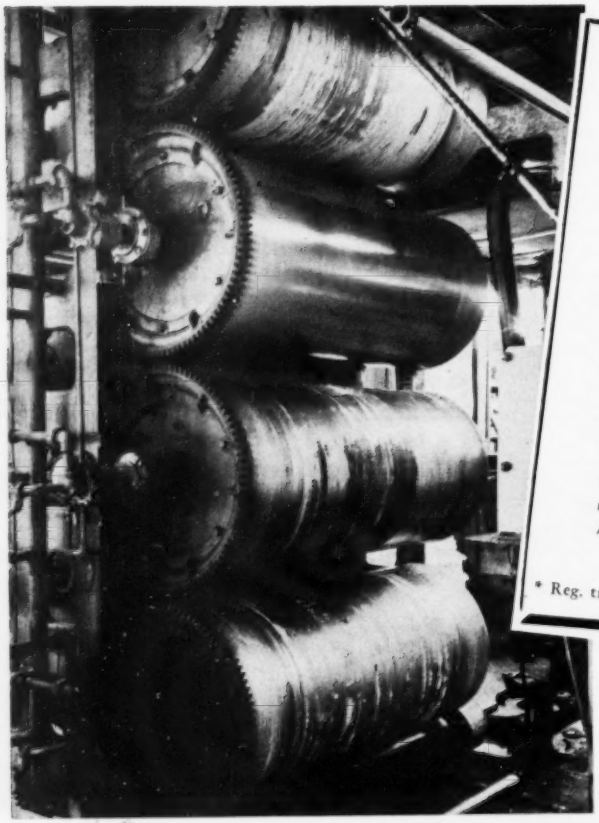

THIS PICTURE IS WORTH A THOUSAND WORDS...

This old adage certainly is true as indicated by this unretouched photograph of a pre-drying unit at Ho-Ho-Kus Bleachery, Ho-Ho-Kus, N. J. It isn't hard to tell which can has been coated with "Teflon"* by General Plastics, pioneers in the application of "Teflon" finishes.

Briefly here are some of "Teflon's" amazing results. The "down time" on this unit with 4 of 8 cans coated, has been reduced from 3½ hours to less than one-half hour. Water and a brush have replaced solvents and scrapers as cleaning tools.

If you have a problem with unwanted adhesion of sizing materials and dyestuffs see us at Booth 103 at the A A T C C convention or write us.

* Reg. trademark for E. I. DuPont Polytetrafluoroethylene

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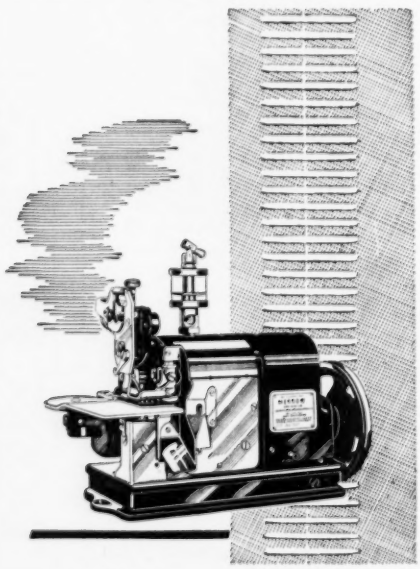
167 THIRD AVENUE PATERSON, NEW JERSEY

MERROW BUTTED SEAMS for efficiency in finishing

The Merrow Butted Seaming Machine permits joining cuts of piece goods in process finishing. The Merrow Butted Seam opens out flat under the tension of processing, allowing the joined pieces to assume an end-to-end relation. Waste of cloth is reduced to a minimum in finishing operations such as shearing, napping, printing, coating, etc. Because the Butted Seam has little bulk, it will calender without damage to rolls or bearings. The stitch "gives" with the material—will not shrink or reduce the width of the piece goods.



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strument stability is excellent and the equipment is designed for production control use by semi-skilled personnel.

Instrument Development Laboratories, 163 Highland Avenue, Needham Heights, Mass.

For additional data, request item J-109, using Handy Return Card on page 208.

Half-Moon-Shaped Creel Provides Uniform Warping Tension

To overcome the problem of different tensions on the ends in a warp beam, a warper creel has been developed which is designed as a segment of a circle whose center is the location of the warper itself. Uniform tension on all ends is attributed to the fact that each cone of yarn is the same distance from the warper and each suspended yarn exerts the same amount of tension.

Designated the Crowther-Garnett Half-Moon Creel, it was conceived by the British woolen and worsted manufacturer, G. Garnett and Sons Ltd., when investigation revealed that tension on yarns coming from cones at the front of conventional creels was not the same as it was on those from the rear. The findings were presented to the textile machinery maker, Crowther Ltd., and this circular creel is the result.

Each section of the creel has a bank of stop motions which operate indicator lights to show the operative where a broken end is. Surplus banks can be cut out if not needed.

Crowther Ltd., Britannia Works, Thurmaston, Leicester, England.

For additional data, request item J-117, using Handy Return Card on page 208.

Synthetic Detergents for Scouring Operations

Two new synthetic detergents for textile scouring operations, Energetic and Energetic S, are now being marketed.

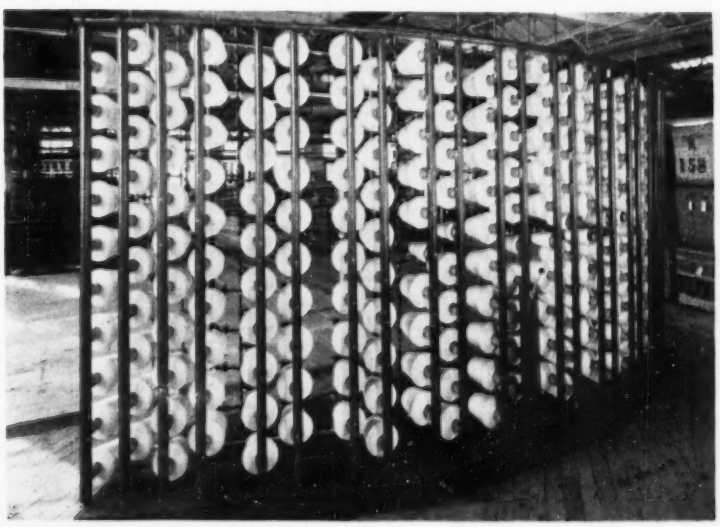
Energetic, a nonionic detergent, has demonstrated characteristics of maximum detergency, high soil-removing and soil-suspending properties, excellent emulsifying action, good wetting properties and surface-tension-lowering ability, and excellent stability to textile chemicals.

Because Energetic is highly concentrated and extremely powerful, quantities required will seldom exceed one-third those of conventional anionic materials.

The product, with wide flexibility for almost all textile scouring operations, is particularly recommended for kier boiling, hosiery scouring and dyeing, dye leveling, continuous bleaching, soaping-off vat and naphthol dyeings, soaping-off prints and wool scouring.

A companion nonionic detergent, Energetic S, is especially designed for use in the presence of petroleum and aromatic solvents. The solvents are

The Crowther-Garner Half-Moon Creel (Crowther Ltd.).



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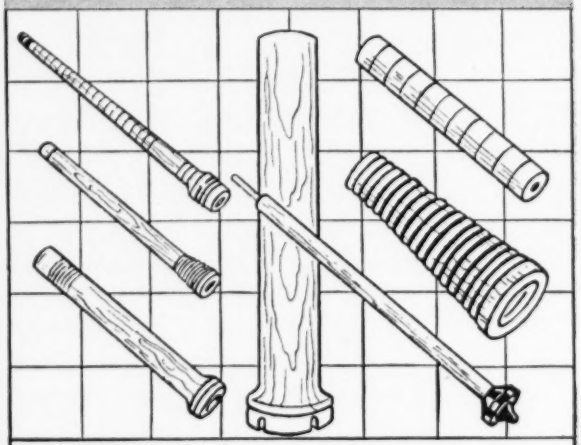

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ABC HAIRON CHECK STRAPS last longer by actual Mill Tests. As much as 2 to 4 times longer than competitive straps.

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ABCO ENDLESS CHECK STRAPS. Two-ply thick, cemented and stitched for long, dependable service and less stretch.

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ABC HAIRON CURVED CHECK STRAPS. Cut from the same foreign Hairon Leather as our regular ABC HAIRON CHECK STRAPS.

ATLANTA BELTING COMPANY.
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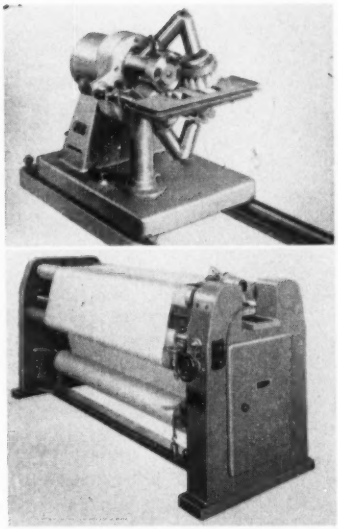
used to loosen grease, stains and dirt from the cloth, and Energetic S then effectively removes both solvent and dirt from the textile fibers, preventing redeposition of them on the cloth.

Extensive use of Energetic S can be made in cotton de-sizing operations, boiling-off such synthetic fibers as Dacron and Orlon, hosiery finishing, and as a machinery cleaner.

Energetic and Energetic S are available for prompt delivery in 5 and 55-gallon steel drums.

Armour and Company, Industrial Soap Department, 1355 West 31st Street, Chicago 9, Ill.

For additional data, request item J-120, using Handy Return Card on page 208.



The Gara selvage trimming apparatus is shown in the upper photo. Below, the Umro cloth rolling machine equipped with the Gara apparatus (Trumeter).

Versatile Selvage Trimming Equipment for Woven Goods

Especially designed for removing the tails from the selvages of fabrics woven on automatic looms is the Gara apparatus. A supplementary unit, known as the Wefa, enables the Gara also to trim the loops of yarn left on fabrics woven on shuttle changing looms. The Wefa breaks the loops along the edge of the selvage and the Gara trims them off.

The Gara can usually be applied on one of the finishing machines through which the cloth must pass after leaving the loom. For grey goods mills a simple cloth rolling machine (known as the Umro) on which the Gara and Wefa are mounted, is supplied.

Rotating brushes on the Gara brush out the tails from the selvage. They also serve to keep the apparatus continuously on the selvage. The unit, which is mounted on ball bearings, can be advanced on its rail about ¾ yd (more if desired) into the center of the machine, and in this way any width of fabric can be trimmed. The device is simply pushed onto the selvage. An easy adjustment enables either thick or thin fabrics to be processed.

The fabric must pass through the machine in a taut state, and when possible should run continuously. One of the units will normally trim the production of up to 300 looms in eight hours and operates at speeds up to 48 ypm.

Made by Arthur Gabrian of Rapperswil, Switzerland, this equipment can be purchased by mills in the United States, Canada, and Mexico from a New York agent.

Trumeter Co., 1265 Broadway, New York 1, N. Y.

For additional data, request item J-114, using Handy Return Card on page 208.

Improved Water Repellent

A new, highly-efficient, silicone-based water repellent for almost all fibers, constructions, and finishes is now available. Called Repelotex ST, this product offers water repellency practically for the life of the fabric.

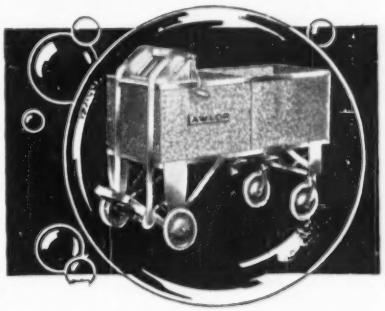
Proven in mill production use after extensive plant trials, the product defies dry cleaning and laundry soaps, improves the strength properties of resin-treated fabrics, imparts greater sewability and a better hand, and is resistant to mark-off effects, spotting or staining.

Advantages offered by the water repellent include easy formulation and application, ready compatibility with resin finishes, no after-wash required, and lack of unpleasant odor either during finishing or after curing.

Onyx Oil & Chemical Co., Warren St., Jersey City, N. J.

For additional data, request item J-119, using Handy Return Card on page 208.

LAWLOR
MOPPING TANKS



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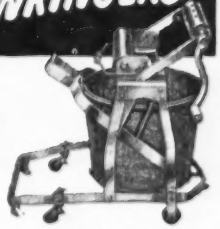
LAWLOR MOP WRINGERS



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EASIEST turning wringer made: there are bearings at ends of rollers.

EASY to bring rolls together; the foot lever is perfectly balanced.

EASY to move wringer: self-adjusting front casters raise metal feet from floor when you're ready to go.

The LAWLOR No. 2 accommodates any standard round, galvanized pail up to 16-quart capacity. Net weight of wringer—23 pounds.

LAWLOR No. 6 TWIN is like the No. 2 Wringer in general construction, but accommodates two pails.

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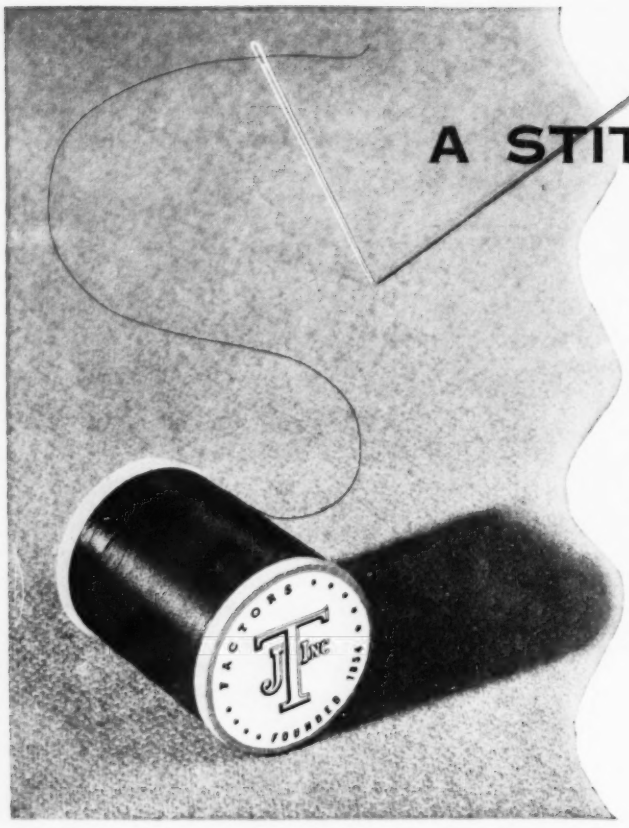

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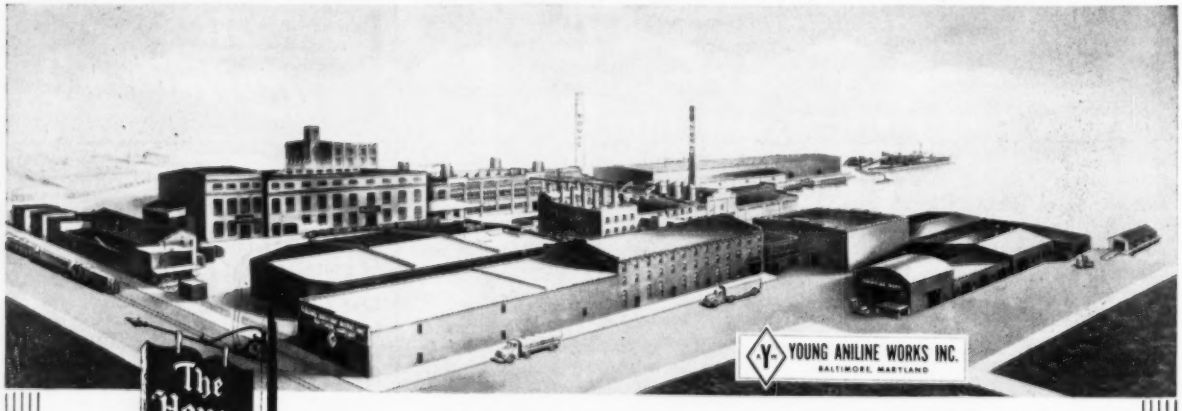

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2701-2733 Boston St., Baltimore 24, Md.

What the TEXTILE MILLS are doing

(Continued from page 38)

has a two-story addition under construction, to be used for storage and distribution.

Clinton Silk Mills, Inc., 58 Canal St., Holyoke, Mass., was recently chartered for manufacture of silk, rayon, and other synthetic fabrics. Walter R. Hampton, 1466 Northampton St., Holyoke, is president.

Champion Bedding Co., Lynn, Mass., has leased part of the former mill of Lawrence (Mass.) Print Works, and is equipping it for the main factory.

The mill of **Beltex Hosiery Co.** has been moved to 4 South Howard St., Baltimore, Md., where larger floor area is available.

Florence Thread Co. has discontinued operations permanently at its Riverside, N. J., mill, and property has been placed on the market.

Fulton Hosiery Mill, Inc., 529 Fulton St., Indianapolis, Ind., has discontinued operations at its local mill and plans to transfer equipment and resume production at another location.

Knitted goods of various kinds will be manufactured by the recently organized **Weymouth (Mass.) Knitting Mills, Inc.** Anthony A. Grein is president and treasurer.

H. & M. Woolen Mills, Inc., recently chartered, will manufacture woolen goods. The incorporators include Arnold Williamson and James H. Higgins, Jr., 219 Smithfield Rd., North Smithfield, R. I.

Highland Knitting Co., Inc., Springfield, Mass., has moved its mill to a building at 125 Main St. for additional capacity.

Jefferson (S. C.) Bleachery, Inc., has acquired property at Fork Creek for construction of a one-story mill with about 12,000 sq ft floor space. It will be equipped for dyeing, bleaching, and finishing of circular knitted cloth.

Knitwear Leaders, Inc., will manufacture outerwear. Henry H. Held, 1457 Broadway, New York, N. Y., is attorney and representative.

Lambertville (N. J.) Hosiery Mills, Inc., is moving part of its mill to a one-story building at Doylestown, Pa., the other section being transferred to a location in the South. The mill building and real estate at Lambertville has been sold.

A new plant, costing about $200,000, has been constructed by **Hawthorne Finishing Co.,** New Haven, Mo., waterproofing, flameproofing, and mildewproofing of canvas goods, etc. The firm is affiliated with H. Wenzel Tent & Duck Co., St. Louis.

James Lees & Sons Co., Bridgeport, Pa., has plans for a one-story addition to the mill, to be used primarily for storage and distribution.

Leona J. Knit Fashions, Inc., recently organized, will operate a plant for manufacture of outerwear. Jean Finkelstein, attorney, 1457 Broadway, New York, N. Y., represents the company.

Lorraine Fibre Mills, Inc., Brooklyn, N. Y., has leased a building on Prospect St., High Point, N. C., for a branch mill.

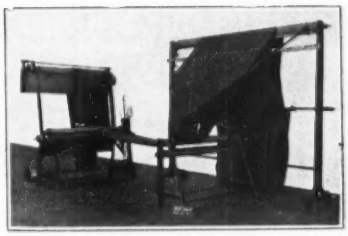
Ludlow (Mass.) Manufacturing and Sales Co. has established a division for production of rayon yarns for use in the rug industry for backing service. Regular lines of manufacture will be continued without change.

The Manchester (Conn.) Knitting Mills division of **Roosevelt Mills, Inc.,** has removed its plant to 210 East Main St., Rockville, Conn.

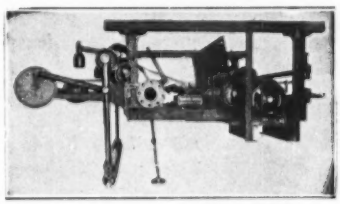
Milltex Hosiery Mills, Inc., Philadelphia, Pa., is concentrating its production at the Palmyra, N. J., mill, where increased operations are being carried out.

A 18,000 sq ft plant for production of hand-fashioned and full-fashioned knitwear is under construction at Uniontown, Pa., by **Louis Gallet Knitting Mills, Inc.,** of **Penn-Craft,** East Millsboro, Pa. The East Millsboro plant will be devoted exclusively to knitting operations, while the plant at Uniontown will be used for sewing, finishing, and shipping.

About 40,000 sq ft floor space have been added to the plant of **Philtex Manufacturing Co.,** Ontario and I

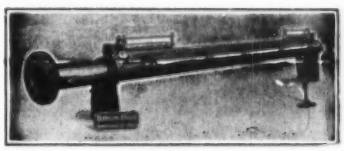


High Speed Tacking Machine Range, designed to operate at 35 yards per minute, for sewing together the selvages of woolens, worsteds, plushes, and rayons, etc. Non-oscillating Head.



BALL BEARING CLOTH OPENING AND FOLDING MACHINE

for woolens, worsteds, laces, cottons, tricot and pile fabrics. Machine illustrated is fitted with our Patent Adjustable Slot Vacuum Extractor so that the machine combines opening, extracting and folding in one operation.



FOR BEST EXTRACTION

Patent Reenforced Adjustable Vacuum Extracting Box with Automatic Slot Seals. Used in combination with dry cans, scutchers, mangles and continuous machines.

PATENTED LONG LIFE RUBBER EXPANDER

with rubber ¾" thick giving longer life and better stretch. Fitted with trouble-free bushings carried in stock. Also made with 3 and 5 Bars.

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BIRCH TREE.

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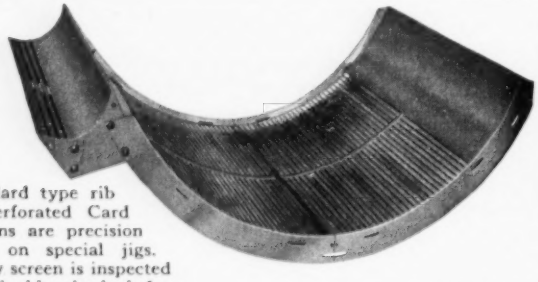
MORE PRODUCTION AT LOWER COSTS

with GASTONIA TEXTILE

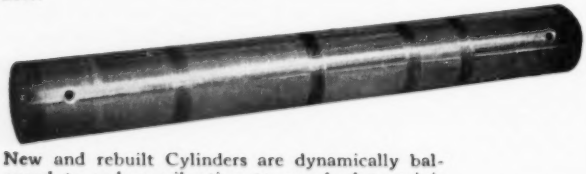
SHEET METAL PARTS

The quality and the profit of your end product starts at the beginning—where preparatory machinery must be geared for efficient, economical volume production. That's our job—a job for specialists with the reputation for top quality products, painstaking workmanship and reliable service.

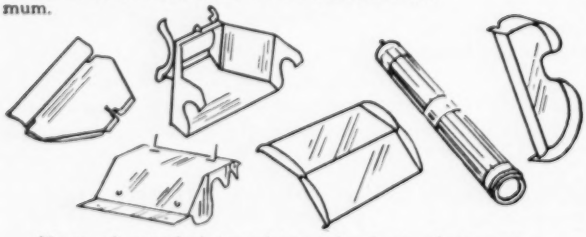


Standard type rib or perforated Card Screens are precision built on special jigs. Every screen is inspected and double checked for accuracy and tolerance.

Picker, Condenser and Waste Machine Screens of maximum strength and durability are constructed of the best materials available.



New and rebuilt Cylinders are dynamically balanced to reduce vibration to an absolute minimum.



Years of practical experience—the finest of raw materials—and precision machinery in the hands of skilled workmen go into every product.

GASTONIA TEXTILE SHEET METAL WORKS, INC.
GASTONIA, NORTH CAROLINA

A SHEET METAL WORKS SERVING TEXTILE MILLS

---

for the best in CANVAS doffer's boxes

LOOK FOR **Lane**

Specially designed for use with doffer's trucks, *only* this economical Lane Style 20 Doffer's Box incorporates *all* these quality features for *long, dependable service at very low cost:*

- Full-capacity body of Lane-woven duck—with deeply-embedded stitches.
- Light-weight, extra-strong spring-steel frame with rugged, flexible hardwood bottom.
- Rounded rivets prevent snags and wear at all points.

STANDARD DIMENSIONS
26" long, 16" wide, 20" high

Lane canvas baskets, hampers, and trucks are *built to take it, built to last!*
See your Lane distributor or write . . .

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Canvas Basket Craftsmen Since 1894

Lane

THE LANE BASKET

W. T. LANE & BROS., INC., Poughkeepsie, New York

Sts., Philadelphia, Pa., for increased output.

Porter Wool Co., Inc., was recently chartered to operate a wool processing and sorting plant. Albert W. Rockwood, 9 Salem St., Wakefield, Mass., is president and treasurer.

Powers Knitting Mills, outerwear, have leased space in a building at 150-47 Hillside Ave., Jamaica, New York.

The former mill of **Hego Fabrics Co.,** Rocky Mount, N. C., rayon and other synthetic fabrics, more recently owned by Robbins Mills, has been acquired by H. E. Goodman and others, who plan to resume production of same type of manufacture as before.

Mikal Knitwear Corp., newly organized manufacturer of knitted cloth, is represented by Harry Block, 518 Broadway, New York, N. Y.

Wamesit (Mass.) Wool Processing Co. has been purchased by former treasurer Selby B. Groff, who is now president and treasurer. Joseph G. Duffy is vice-president in charge of sales; Oliver K. Compton, assistant treasurer and plant manager; Franklin P. Swain, assistant to the president; and Paul S. Arnaud, secretary

A. J. Kaminsky, New York, N. Y., and associates have purchased the mill of **Woonsocket (R. I.) Rayon Co.**

Sanson Hosiery Mills have moved their offices to the finishing mill in Allentown, Pa. The Ephrata, Pa., branch knitting mill has been moved to Wyoming, Pa. Expansion is planned at the firm's Corinth, Miss., branch mill, including a new addition to the plant and installation of additional equipment.

Thirteen buildings, one to three stories high, have been sold by **Alexander Smith, Inc.** as part of its program to centralize production in other buildings now occupied.

Circle Brands, Inc., an interest of Horvath Mills, Inc., has acquired **Superba Manufacturing Co.,** Greenville, S. C. The new owner will continue production without change.

Wyoming Manufacturing Co., Richmond, R. I., has been organized for manufacture of cotton and woolen yarns. Henry Boucher, Wickford, R. I., is principal incorporator.

SUPPLIERS News
WHAT THEY ARE DOING

(Continued from page 44)

delphia warehouse to serve the New England and Middle-Atlantic states with its line of power transmission and conveying equipment. New executive changes are; J. C. Merwin, chairman of the board of directors; and L. B. McKnight, succeeding Mr. Merwin as president and chief executive officer.

Charlotte Leather Belting Co. has appointed Robert L. Swift sales manager. Mr. Swift was previously sales representative in the South Carolina territory. Edwin Christenberry, Jr., formerly with Victor Monaghan Mills, Greenville, S. C., has taken over South Carolina for Charlotte Leather.

Mrs. W. D. Dodenhoff was recently elected president and treasurer of **W. D. Dodenhoff Co.,** succeeding her husband, who died July 13. Other officers named are: W. F. Leineweber, Jr., vice-president and general manager; and Walter F. Brocks, secretary.

New offices have been opened at 3182-4 Peachtree Road, Atlanta, Ga.,

Mr. McCall

by the **J. O. Ross Engineering Corp.** Howard H. McCall, formerly in the New York office, is in charge of the new operation.

Dr. Harold E. Woodward has retired after more than thirty-five years as research chemist at **E. I. du Pont de Nemours & Co., Inc.'s** Jackson laboratory. The first tank car of hydrogen peroxide manufactured

Laurel
Textile Specialties
cut your processing costs

Laurel Textile Finishing Agents

Laurel Textile Oil—cotton, rayon
Lauramine #1—cotton, synthetics
Lauramine #20—softener for package-dyed cotton yarns and blends
Olamine (Cation Active)—cotton, synthetics
Yarn Conditioners—cotton and mixed yarns
Softeners and Anti-Static Compounds—Regent Coning Oil—Orlon, Dacron, Acrilan, Nylon, Acetate
Spinol RL—Orlon, Orlon-Wool blends, Dacron
Laurel Hosiery Finishes—all fibers
Permanent Resin Finishes—all fibers
Flame Retardant #527C
Water Repellent Compounds—all fibers
Weighters & Conditioners—all fibers
Dullers

Laurel Scours and Penetrants

Laurel Brand Soaps—all fibers
Laurel Hydrosol—wool, cotton, mixtures
Laureltex Transfer Removers—all fibers
Laureltex #340
Laurel Transfer Solvent #622C
Laurel Synthetic Detergents and Penetrants
Laurel Supergel RS—all fibers
Laurel Boil-off Compounds—rayon, nylon, mixtures
Laurel Triconate—rayon, nylon, mixtures
Laurel Oils—Wool, Rayon—Sulphonated, Scouring, Fulling, Finishing Oils for all purposes; Stainless Knitting Machine Oil

Laurel Products are available for all fibers and fabrics. Call on us for recommendations to meet your specific problems.

LAUREL SOAP MANUFACTURING CO., INC.
Wm. H. Bertolet's Sons
ESTABLISHED 1909
Textile Soaps, Oils, Finishes
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Warehouses:
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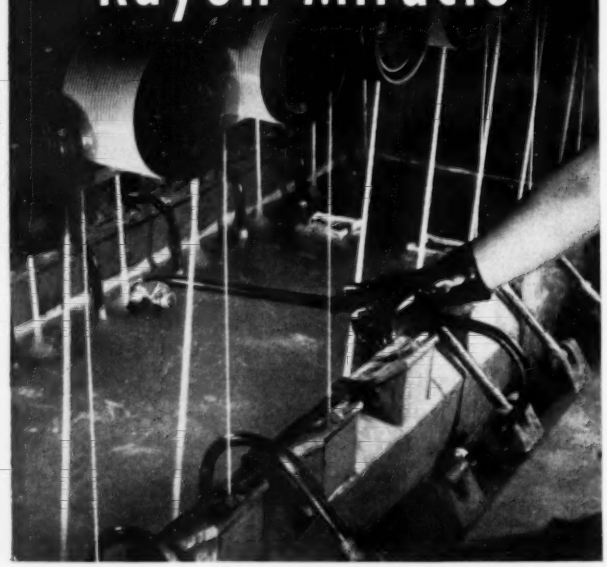
Three feet of a Rayon Miracle



This short length of Superior tubing—original equipment on Industrial Rayon Corporation's continuous spinning and process machines—carries viscose the last three feet to the spin bath where it's forced through spinnerets to solidify as filaments of rayon yarn.

Industrial Rayon, developers of this revolutionary Continuous Process Method, forms these spin bath tubes from Superior ⅜" O.D. Temper #1 Carbon Steel Tubing purchased through a local distributor. They specified Superior tubing because they've found that size and quality are always uniform . . . wearability excellent . . . cost low.

If you use tubing in your textile processing—**for warp bars, thread guides, needles, welt rods or any other purpose,** write for Bulletin 32...it contains many helpful ideas. Superior Tube Company, 2034 Germantown Ave., Norristown, Pa.

Round and Shaped Tubing available in Carbon, Alloy and Stainless Steels, Nickel, Nickel Alloys and Beryllium Copper and Titanium.

Superior

THE BIG NAME IN SMALL TUBING

All analyses .010" to ½" O.D.
Certain analyses in Light Walls up to 2⅛" O.D.

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dominance through perfection

Today, the Pfister trademark is accepted as a standard of perfection on Naphthols and B.O.N.

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Southern Representative: DYER S. MOSS CO., Charlotte, N. C.

42 STOCK SIZES

HALLOWELL®
SOLID STEEL COLLARS

now size-marked for easy identification

Your HALLOWELL distributor now stocks these *size-marked* precision machined solid steel collars in sizes to fit shafts from 3/16" to 3" inclusive. And positive positioning of every HALLOWELL Collar is assured by the famous self-locking UNBRAKO Socket Set Screw—the screw that won't work loose. Write for literature and the name of your nearest HALLOWELL distributor. STANDARD PRESSED STEEL CO., Jenkintown 34, Pa.

Our Fiftieth Year : A START FOR THE FUTURE

HALLOWELL POWER TRANSMISSION DIVISION

SPS
JENKINTOWN PENNSYLVANIA

SUPPLIERS News
WHAT THEY ARE DOING

by a new non-electrolytic process developed by Du Pont was recently shipped from the firm's Memphis, Tenn., plant to a southern textile mill.

General Electric's Apparatus Sales Division has announced the appointment of R. H. Jackson as district sales manager for the southeastern region. His sales staff consists of: J. H. Persons, manager of agency and distributor sales; M. O. Troy, Jr., manager of apparatus product sales; B. D. Casey, Jr., manager of component product sales; **J. F. Baker,**

Mr. Jackson (left)

Mr. Baker (lower left)

Mr. Troy (lower right)

manager of industry sales; J. L. Townsend, manager of advertising and sales promotion and acting manager of marketing research; and E. A. Jones, manager of order service. All are located at the district headquarters at 1860 Peachtree Road, N. W., Atlanta, Ga. Manager of Atlanta's apparatus sales office is John C. Ager. A five-million-dollar plant for manufacture of general purpose controls for industrial use is being constructed at Bloomington, Ill.

Donald C. Starr has been appointed secretary and comptroller of **Chemsteel Construction Co., Inc.,** Pittsburgh, Pa.

Gallowhur Chemical Corp., manufacturer of agricultural and industrial chemicals, has announced the election of Julius Fleischmann as a director of the firm. Gallowhur has registered many trademarks familiar to the agricultural, textile, paper, and rubber chemicals industries.

Ernest A. Zingale has been made sales representative for **Gladwin**

Mr. Zingale

Plastics Co. products in Virginia, North and South Carolina. He will work directly out of the firm's home office in Atlanta, Ga.

Geigy Co., Inc., and its president, William F. Zipse, are together celebrating their 50th anniversaries this year. Mr. Zipse joined John J. Keller & Co. one month before Geigy, then well established in Europe, purchased the operation and created the Geigy Aniline and Extract Co. in July, 1903.

A 70" inspection machine has been installed by **Ginsberg Machine Co., Inc.,** in its show room at 224 Fifth Avenue, New York City. This will enable weaving mills to see an actual demonstration on their own goods when planning to install the "Trim-Master" selvage device.

The **Goodyear Tire & Rubber Co.** is celebrating this year the 10th anniversary of its research laboratory at Akron, Ohio.

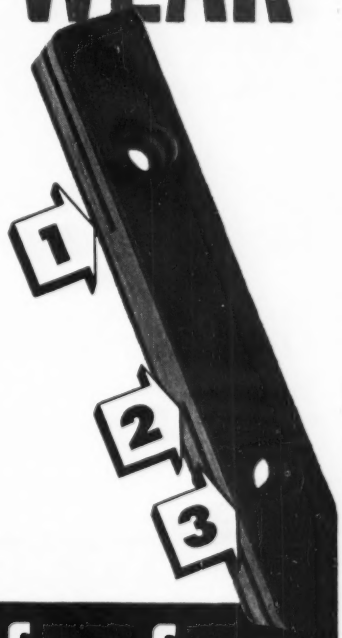
New sales manager for the knitting division of **Alfred Hofmann Needle Works, Inc.,** is Hanns L. Wirth, who has been a Hofmann representative since 1929.

The **Ingalls Iron Works Co.,** Birmingham, Ala., has appointed Robert B. Warnock in charge of sales of the Birmingham Tank Co. division. Mr. Warnock was formerly with The Texas Co.

A Mobile Safety & Personnel Clinic, completely equipped with instruments to provide for examination of all **Johnson Motor Lines, Inc.,** employees, has been put into service. It will rotate among Johnson's eighteen terminals and will provide for complete examination of drivers

REVERSIBLE FOR

LONG WEAR



Super-Stroke
Fibre Reinforced
SWEEP STICKS

The exclusive 3-point fibre-flex suspension design of Super-Stroke Sweep Sticks gives outstanding wear . . . and the unique reversible feature doubles its life again! Made of finest, ski-quality hickory with pressure bonded fibre sides and inserts that are locked to the wood forever. For top performance, insist on Super-Stroke Sweep Sticks. Order today from

NORRIS BROS.
GREENVILLE, S. C.

Representatives:
R. E. L. Holt, Jr. and Associates, Greensboro, N. C.
Morris R. Copeland & Co., Griffin, Ga.

QUALITY WORKMANSHIP
with PROMPT SERVICE

Two to three weeks delivery on
all repairs to Rollers, Flyers & Spindles

Repairing all types of Rolls and making new Steel Rolls
Overhauling Drawing a Specialty

Repair and make NEW Card Room Spindles

Make new any Fluted Roll • Lifter Rods
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Satisfaction Guaranteed on all Work

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1212 East Industrial Ave. Gastonia, N. C.
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Serves
THE TEXTILE INDUSTRY
with A COMPLETE LINE OF
OILS and CHEMICALS

KALI MANUFACTURING COMPANY
Manufacturing Chemists
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SAVE MONEY
... in your spinning room

National Travelers are designed and made to perfect your spinning. Precisely balanced, carefully hardened, and smoothly finished, these long-lived travelers are engineered for higher production of stronger yarns. Ask us to recommend the *right* travelers that will put money in the bank for your mill. National Ring Traveler Company, Pawtucket, R. I., and Charlotte, N. C.

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WENTWORTH
Double Duty • Gravity • Gravity Express • Bal-Ellipsoid

NATIONAL ETARTNEP FINISH
F. L. Chase, Jr., Pres. & Treas. • L. E. Taylor, So. Mgr.

NATIONAL RING TRAVELERS

OLDEST AND LARGEST MANUFACTURER OF RING SPINNING AND TWISTING TRAVELERS IN THE UNITED STATES

Control MAXIMUM PRODUCTION
with G. S. HAND TACHOMETERS *and* SPEED INDICATORS

1% Accuracy for any range from 30 to 100 000 RPM or surface speed.
Antimagnetic durable mechanism.
Efficient repair service at moderate charges.

IDEAL FOR MOTORS - SHAFTS - SPINDLES - LOOMS - TURBINES - FOR TEXTILE AND POWER PLANTS

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KENTEX
TEXTILE APRONS

Precision-built, of genuine leather, they "Fit Better—Wear Longer." Write for free samples and prices.

KENTEX TRADE MARK REG. APRON

TEXTILE APRON CO., East Point, Ga.

HUGH WILLIAMS & COMPANY, TORONTO, CANADA—CANADIAN REPRESENTATIVE

SUPPLIERS News
WHAT THEY ARE DOING

as a forward step to promote safety on the highways.

Interchemical Corp. has appointed Stewart Hoagland manager of corporate advertising and promotion. He has been with the firm since 1938.

The fine chemicals division of **Pittsburgh Coke & Chemical Co.** has

Mr. Jenkins

appointed Richard Jenkins as textile chemist and colorist. Before joining the firm, Mr. Jenkins was with J. P. Stevens Co.

Karl T. Marx, while continuing to handle advertising and public relations for **Robert Reiner, Inc.,** has taken over the direction of the firm's full-fashioned machinery sales division.

J. F. Fitzgerald, with the firm for the past 18 years, was recently elected an assistant vice-president of **National Starch Products, Inc.** The U. S. Navy and the Office of the Quartermaster General have awarded National Starch research and development contracts for the production of an improved adhesive for packaging of items for shipment.

C. W. Mitchell was recently made executive vice-president of **Nyotex Chemical Co.,** a mutually owned subsidiary of Consolidated Chemical Industries Inc., Stauffer Chemical Co., and Harshaw Chemical Co.

Arthur D. Little, Inc., has announced that the portion of the firm's common stock previously held in trust for the Massachusetts Institute of Technology under the will of Dr. Arthur Little has been purchased by the employees' retirement trust. Therefore, scientists working for this research organization will have a major stake in the financial returns from their investigations and developments.

I. Melville Stein, formerly executive vice-president, has been elected president of **Leeds & Northrup Co.** He succeeds Charles S. Redding, now chairman of the board. D. H. Schultz has become executive vice-president and retains the duties of treasurer. George W. Tall, Jr., vice-president, also assumed the post of secretary.

McLean Trucking Co. has opened a motorfreight terminal at Winston-Salem, N. C., which is designed to handle 3,000,000 pounds of freight every 24 hours. Chief feature of the new terminal is a floor-type dragline called the "towveyor," which consists of an endless chain, flush with the floor, that moves around the dock area. Freight is loaded on four-wheel carts and hooked to the moving dragline, which pulls the carts to their designated track number, where they are unhooked and moved to a waiting trailer.

C. P. Walker, with the firm since 1933, has been made manager of the general industries section in the industrial department of **Westinghouse Electric Corp.'s** apparatus division at

Mr. Walker

East Pittsburgh. The Westinghouse plant at Attica, N. Y., which has been building industrial stokers, is now a branch plant of the motor and control division, and will produce parts for electric motors and some other products.

His friends in the industry will be interested to know that George Snow is celebrating his fortieth anniversary as representative for **Atlanta (Ga.) Brush Co.**

Reliance Electric and Engineering Co. has two mobile exhibits of electric motors, motor-drives, and associated controls touring through various sections of the country. The first exhibit, equipped to interest textile men, features two newly-developed Reliance motors designed

Orr
SLASHER
Cloth
With Special
Chemical Treatment
Something New and Better

• Slasher Cloth is an important maintenance item in a cotton mill. With the introduction of ORR Slasher Cloth with Special Chemical Treatment, many of the problems which have pestered the slasher room foreman have been eliminated.
The slasher room foreman, in order to satisfy the superintendent and the cost department, must have available a Slasher Cloth that:

1. Dresses the yarn properly.
2. Holds its width. No shrinkage.
3. Maintains level production performance
4. Starts fast — lasts long.

ORR Special Treated Slasher Cloth maintains uniform dressing properties, resists bacteria and steam degradation, maintains dimensional stability. Discuss your Slasher Cloth problem with your ORR representative.
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J. S. FALLOW & CO.
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Telephones: 3-0958—3-4557
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MANUFACTURED BY
THE ORR FELT & BLANKET CO.
PIQUA, OHIO, U. S. A.

Industrial Woolens by Orr
STARTS FAST — LASTS LONGER

FOR KNITTING OR WEAVING

Insist on

AMERICAN & EFIRD YARNS

® AMERICAN DURENE* As advertised in leading magazines

NATURAL YARNS
Combed Peeler or Sak, 10's-90's Single
Combed Peeler or Sak, 10's-100's Ply
Carded Peeler, 8's-30's Single

THREAD DIVISION LAWRENCEBURG, KENTUCKY

ALSO SYNTHETICS AND WORSTED YARNS

AMERICAN & EFIRD MILLS, INCORPORATED
Mount Holly, North Carolina • W. R. SUTTENFIELD Vice-President and Sales Manager
Successors to American Yarn & Processing Company and Efird Manufacturing Company

MOUNT HOLLY, N. C. Mr. C. P. Wood; Miss E. B. Abernathy; Mr. T. J. Davis
HIGH POINT, N. C. Mr. E. J. Holbrook
CHATTANOOGA, TENN. Mr. H. W. Davenport, 728 James Bldg.
BOSTON, MASS. Mr. L. T. Howick, 222 Summer Street
PHILADELPHIA, PA. Mr. Wm. Montgomery, 3701 N. Broad Street
ALBEMARLE, N. C. Mr. A. K. Winget
CHICAGO, ILL. Wood & Hutchinson, 222 W. Adams Street
GASTONIA, N. C. Mr. T. C. Smotherman
NEW YORK, N. Y. 51 Madison Avenue
ANNISTON, ALA. Mr. Horace Frierson

No Other *Low Cost* Lubrication Method *Compares* with TRICO AUTOMATIC OILERS

Feature For Feature, Only TRICO Offers MORE

In thousands of Textile Mill applications, TRICO Oilers are *proving* their worth by repaying their low cost many times over through savings of down-time production loss, oil, labor and bearing replacements. One trial will confirm our claims.

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Clipper BELT LACING EQUIPMENT

For Belts and Tapes 1/16" to 3/8" thick

Industry's Most DEPENDABLE Belt Joints

Proven by use and comparison, Clipper Belt Hooks assure longest service. Made from uniformly high quality, fatigue resisting wire produced exclusively to meet our rigid specifications. For easy application and maximum uninterrupted service, use GENUINE Clipper Belt Lacers. There is a type and size for your needs.

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Industrial Engineers

SPECIALIZING IN TEXTILES FOR OVER ONE-THIRD OF A CENTURY

PAYROLL CONTROLS COST SYSTEMS
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The Nation's largest manufacturer of Sizing Compounds, Gums, Waxes and other kindred products for all warp yarns.

expressly for powering the Gwaltney spinning frame introduced by Saco-Lowell Shops. The other exhibit is visiting machine tool builders, metal-working plants, etc. Two new application engineers have been added to the company's staff: Garvin L. Jones, assigned to the Newark, N. J., office, and Thomas J. Lisy, with headquarters in Pittsburgh.

A. Harold Zayotti, Jr., is now contacting textile finishing plants in the Pennsylvania area for **Riggs & Lombard, Inc.** His territory includes Pennsylvania, New Jersey, Delaware, West Virginia, Maryland, and Northern Virginia.

Richard H. Stinnette and Irving R. Fisher have joined the Fiber division of **Virginia-Carolina Chemical Corp.** Mr. Stinnette will be active in the sales promotion of Vicara, and Mr. Fisher will serve as Vicara sales representative to the mills and garment trade.

The **United States Supply Co.,** East Providence, R. I., has been made New England sales representative for **Sill Industries.**

George Wrigley, vice-chairman, **J. E. Sirrine Co.,** Greenville, S. C., has been elected a fellow of the American Institute of Electrical Engineers. He was thus honored for "instituting pioneer and revolutionary engineering changes in the textile industry resulting in the early establishment of the trend to individual motor drive."

The **Strandberg Engineering Laboratories** have selected the **United States Supply Co.** as their New England representative.

Charles F. Millen has been placed in charge of equipment sales for the **G. H. Tennant Co.** in Rhode Island, Massachusetts, New Hampshire, and Maine. Russell Kelly, engineering service representative, has been assigned to Massachusetts and Rhode Island. He was formerly in Maine and New Hampshire. That territory has been turned over to Carlton Strong.

Henry Petershagen has retired as representative for **Union Special Machine Co.** after 46 years of service. Succeeding him in the Texas territory is Hugh L. Gratsch. Other personnel changes are: A. H. Holzapfel, who represented the company for 30 years in Michigan, Indiana, Illinois, and Wisconsin, is devoting his efforts to mechanical problems for the Chicago sales office; his previous territory will be covered by Robert Amacker. J. H. Muir has been transferred from Philadelphia to the Cincinnati office as assistant manager; Stanley Singer is now covering portions of Brooklyn and Queens and all of Suffolk and Nassau counties, out of the New York office. L. A. Van Hooser has been made representative with headquarters in New Orleans.

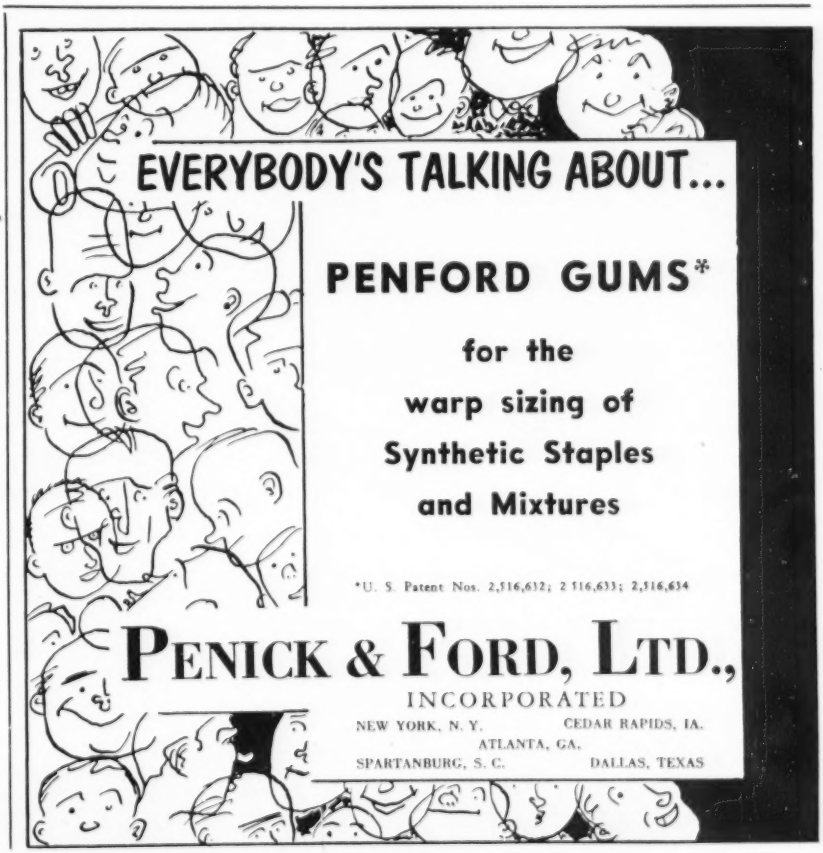
Four sons of **Westinghouse Electric Corp.'s** employees were recently awarded $2,000 scholarships to begin undergraduate study in the engineering or physical science fields. These scholarships were established to honor Westinghouse employees who served in World Wars I and II and are granted each year to sons of employees or to junior employees. The former northwestern district of Westinghouse has been renamed the Mid-America region, with headquarters in Chicago. New manager of the region is A. M. Fisher.

Morris S. Rosenthal, president of **Stein, Hall & Co.,** recently received a plaque for "Distinguished Service to the United States Import Trade" from the National Council of American Importers, Inc., of which he is a former president. This is only the second time in the history of the Council that such recognition has been made.

SUPPLIERS News
WHAT THEY ARE DOING

William S. Baillie has joined the **Saco-Lowell Shops** as a sales engineer, with headquarters in the firm's Atlanta office.

Mr. Baillie



News in Brief

(Continued from page 121)

repudiated by them, the National Labor Relations Board has held in its first decision on this point.

Textile Foundation Scholarships. Nine high school graduates will be awarded scholarships valued at $2,000 each to finance study in New England textile schools, according to plans of the New England Textile Foundation. Scholarships will be awarded on the basis of a competitive aptitude test given by the College Entrance Examination Board in March of 1954.

Symposium on Air Conditioning. A Symposium on Conditioning and Weathering was sponsored by ASTM Committee E-1 on Methods of Testing. The papers presented included "Air Conditioning in the Manufacture and Testing of Textiles," by R. H. Brown, executive engineer, Parks - Cramer Co., Fitchburg, Mass. A new edition of the Symposium is available from the American Society for Testing Materials.

Standard for Good Middling Cotton. The U. S. Department of Agriculture has announced the promulgation of a physical standard for the grade of Good Middling (white) cotton to become effective August 1, 1954. Although the physical form standard does not become effective until 1954, the Department is undertaking to make boxes of the standard available to interested persons for study as soon as possible.

Chromspun Satin. Chromspun satin, a solution-dyed synthetic acetate yarn used for the first time in comforter-covering, makes the comforter readily dry cleanable and resistant to water spots. The material is color fast for life to such things as sunlight, perspiration, and cleaning fluids, The Schwarzenbach Huber Co. stated in a recent announcement.

Disposable Cotton Towel. A disposable cotton towel has been developed and will be distributed by Wipex Co., Toledo, Ohio. Made of cotton and plastic, the product may be used for wiping, cleaning, polishing, and other industrial uses.

Electronic Mule for Woolens. An electronic spinning mule has been developed by Leeds University textile department. The first large-scale model for mill trials is being made by Textile Machinery Makers (Research) Ltd.

More on K Factor of Yarn Strength. Persons engaged in research and testing of cotton for both experimental and commercial purposes may find helpful information in a recently published report entitled "An Evaluation of the Significance and Use of the K

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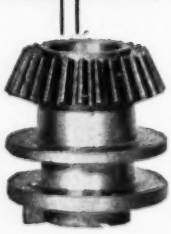

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Factor of Yarn Strength and Its Relation to Raw Cotton Quality." It is based on a study by personnel of Research and Testing Div., Cotton Branch, Production and Marketing Administration, U. S. Department of Agriculture.

Trousers Up? Hosiery men say trouser lengths will follow the new hemline. W. F. Williamson, president of the NAHM, says that changes in women's dresses will result in the abandonment of the present "down at the heels look" which has characterized men's trouser lengths for several years. The style change will be made easier because of the availability of a wide choice in socks which will complement the men's clothes both in color and texture.

Electrical Conference Program. Topics on the agenda of the Textile Industry Conference on electrical equipment to be held at N. C. State College, Raleigh, N. C., Oct. 29-30: "Underground Power Systems," "Grounded Power Systems," "Variable Speed Drive with Magnetic Amplifier Control," "Overload Protection for Electric Motors," "High Interrupting Capacity Fuses," "Circuit Breakers," "Textile Mill Control Enclosures," "NEMA Motor Rerating Program," "Panel Discussion — Electrical Problems and Remedies."

Government Inventions Available. A book titled "Government-Owned Inventions Available for License" has been published by the Commerce Department so that greater productive use might be made of the scientific and technological advances brought about at government expense. The book may be purchased at the field offices of the Department of Commerce or directly from the Government Printing Office, Washington 25, D. C., for $1.00 per copy.

To Study Communism in Unions. Reports of Communists in some American labor unions is to be investigated later this year by Senator Butler (R.-Md.), chairman of a subcommittee of the Senate Judiciary Committee.

On Discussion Groups. The Economics Research Department of the U. S. Chamber of Commerce has issued a set of 17 pamphlets in the form of an Economics Primer designed particularly for the reading of the businessman and the setting up of local economics study groups. Ask for free leaflet on how to set up a discussion group by writing to the U. S. Chamber of Commerce, Washington 6, D. C.

ACMI Annual Meet. The 1955 annual meeting of the American Cotton Manufacturers Institute will be held at the Palm Beach Biltmore Hotel, Palm Beach, Florida, March 31-April 2.

Proposed Changes in Taft-Hartley. Following is a summary of the President's proposed revision of the Taft-Hartley law:

. . . to deny unions the right to force employers to re-open contracts for the purpose of bargaining on issues not covered in the contract.

. . . to place federal authority above all state laws. Such "paramount authority" of federal law would leave little strength to the states in labor relations.

. . . to nullify state authority to protect the right-to-work, regardless of membership or non-membership in a union.

. . . to relax present T-H prohibitions against secondary boycotts.

. . . to narrow definition of "supervisor," thus expanding potential of union jurisdiction over employees.

. . . to eliminate requirement that union leaders sign non-communist affidavits.

. . . several proposals would weaken present restrictions against compulsory union membership, strengthen union control over hiring, seniority and welfare benefits.

Wool Bureau Color Film. The Wool Bureau has introduced a new sales training film, "The Seven Wonders of Wool." In dramatizing the seven most important qualities of wool the film features the "felt-

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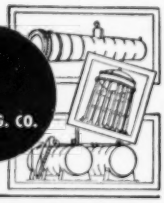

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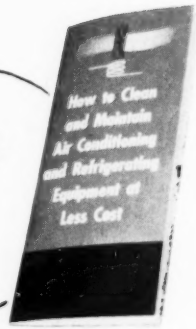

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board" technique, used to illustrate a sales training talk. Cartoons, puppets, and actors also appear in the color film, which has a running time of 22 minutes. The film was produced primarily as a sales training aid.

1954 Cotton Week. Dates for National Cotton Week in 1954 have been set for May 10-15. 1954 will make the 24th time the nation has paid tribute to cotton, the fiber which represents 70 per cent of all textiles sold in the U. S.

8-Day Statistical Quality Control Course. An intensive advanced training course in statistical methods of quality control especially designed for textile industry personnel will be offered by the Georgia Institute of Technology during the period Nov. 11-19, 1953. For further information, write: C. H. Taylor, Coordinator, Short Courses and Conferences, Engineering Extension Div., Georgia Institute of Technology, Atlanta, Ga.

An Executive Views the News in Textiles

(Continued from page 125)

case had been pending for sometime and only a few weeks ago was decided finally by the National Labor Relations Board. Its current status, as this is written, is that both the union and the company have asked for a review of the case by the Federal Courts and one petition, that of the union, was filed in Boston, while that of the company was filed in Richmond. There is indecision at this time as to which Court shall have jurisdiction.

As most readers will recall, this was the case of a Massachusetts Company, called Mount Hope Finishing Company, which ceased operations there a year or two ago. A short time later, Mount Hope Finishing Company, Inc., began business at Butner, North Carolina, apparently with the same officers the other company had in Massachusetts. When it discontinued operations in New England, Mount Hope was having serious labor difficulties, and the assistant treasurer of the company was quoted in the press as saying that the management was "fed up with unabated threats and economic and financial pressures exerted by the union" and "just can't take it any longer."

It was charged that the opening of the plant at Butner, North Carolina, constituted a "runaway" case in which management had fled from Massachusetts to North Carolina to escape the union. The National Labor Relations Board claimed that this was, indeed, the case; and it ordered the company to bargain with the union, to offer reemployment to all employees who were discharged from the Massachusetts plant as a result of a strike in 1951, immediate reinstatement, with traveling and moving expenses, and with back pay.

In computing the back pay, the NLRB indicated that the company may deduct from such back pay all sums earned by the employees who had other employment during this time interval. The reinstatement of the employees, said the board, was to take place in Massachusetts, if the company elected to reopen that plant, or if it did not make such election, then reinstatement was to take place at Butner, North Carolina.

To an ignorant layman, this decision seems to mean that if George Washington had thrown his dollar across the Potomac River with a little less force, and the dollar had fallen into the water, then he might have been cited by the National Labor Relations Board. The time seems to have come when you can no longer make a decision as to where you will put your money or what you will do with it. Maybe George was lucky.

Gotham Hosiery Packs a Wallop

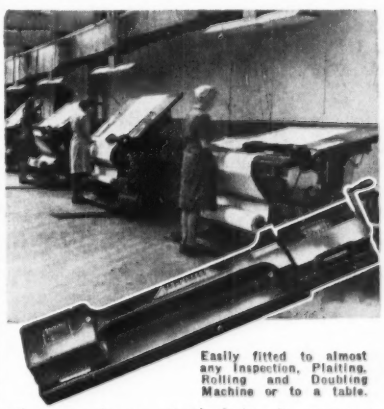
(Continued from page 143)

due to the extremely flat dimension of the airless package.

Taking advantage of the space savings feature, Gotham is supplying its retailers with a counter display for vacuum packed hosiery that is proving to be a powerful sales assistant. It is placed right on the counter, and because it takes up so little room, stores don't mind placing it in heavily traveled aisles on the main floor where space is at a real premium. The small display holds 200 pairs of hosiery. The display brings the goods four feet closer to the customer who now can examine hosiery first hand instead of the back of the sales clerk searching for merchandise in the stock shelves. The display is divided into three style compartments: Style A Short, Style B medium, Style C long with graduated sizes ranging from 8 to 11½.

Favored By Sales Clerks. Sales clerks, although slow to take up the new idea, are now unanimously in favor of it. It allows them more time to sell and more potential commissions. The hosiery is all prearranged in logical order for easy location and selection, and many pairs are concentrated in a little area. Time and motion studies taken among sales clerks show that less time is now devoted to stock work, formerly a principal

"TRUMETER"



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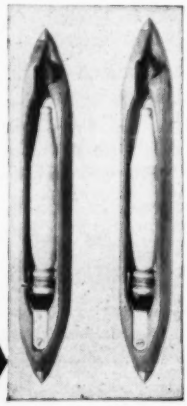

. . . Watson-Williams' newest additions—shuttles for Draper Looms, fitted with Cast Iron Eyes, to accommodate a longer filling package. Left—15¼" long. Right—15¾" long.

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1. Search for stock on shelves.
2. Removal of stock from shelves.
3. Taking lid off of box.
4. Removing liner.
5. Breaking band.
6. Removing and unfolding stocking.
7. Sales talk and demonstration.

The package has also eliminated this: Customer: "That's fine. Now get me a fresh box." That means the old package opening process must be worked out in reverse, and perhaps a piece of markdown merchandise will be a result of the operations.

For Customers Who Must Handle. What about the customer who insists upon physical contact with the merchandise? For these hard-to-satisfy shoppers, Gotham provides the display with wings to which can be attached samples. When the sample is rendered unsatisfactory after reasonable service, it's replaced with fresh merchandise. However, the frequency of soiling in this instance hardly approaches that of the old selling technique where there was a chance of damage with each sale. Of course, there is always that possibility of a second finding its way into a vacuum package, but this rarity (perhaps 3 pairs per 1000) doesn't compare with what the customer gets today in the way of manhandled merchandise.

In order to fully establish his confidence in the vacuum package, Roy E. Tilles, president of Gotham, placed a typical pack in a manila envelope and had it mailed around the world with directions for thirty different postoffices to machine or hand cancel the stamps. Upon its return to Gotham's Madison Avenue office in New York, the vacuum pack and its pair of stockings were as good as ever.

While the machine and package are controlled by Standard Packaging Co., Gotham has rights to vacuum package all soft goods in the United States and Canada. Negotiations are under way now with several prominent textile mills for sub-licensing agreements. It is expected that the adaptation of this by the rest of the textile industry will come in time, but like anything new, education will be required.

For a more detailed description of the 3000 packages per hour machine and its operation, study the photographs.

Rubber Belt Compressive Shrinking Machine

(Continued from page 154)

with shoes, this phase of maintenance is eliminated, as is the necessity for regrinding or refinishing the cylinder if it becomes scored when the shoes are improperly set.

Various finishing oils have been known to damage rubber rolls, but we have had no evidence of any detrimental effect on the rubber belt.

Speeds for Styles. The speed of the entire range, of course, is easily varied. For 3.65 yd/lb pajama checks we operate our unit at 92 yards per minute; for 1.80 yd/lb the speed is about 50 yards per minute, or about the same speed as the conventional unit.

As far as savings on chemicals are concerned, we can make no positive statement. Perhaps, since the hand of the fabric is so much better with the rubber belt machine, it is possible to get by with a slight reduction in the amount of softener; but we haven't attempted to do so. The same principle of using various chemical agents to secure different hands is employed on the new range.

The rubber belt compressive shrinking machine was developed by Cluett, Peabody & Company, Sanforized Division; it is being built in this and foreign countries by licensed machinery manufacturers. The equipment at Russell Manufacturing Company's bleachery was manufactured by Morrison Machine Company.

Fabrics processed on the new machine can carry the "Sanforized" trademark as long as they conform to the requirement that residual shrinkage after processing shall not exceed one per cent.

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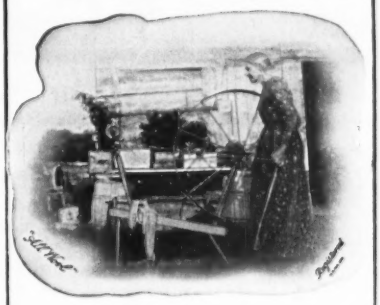

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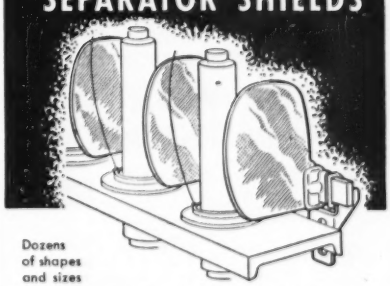

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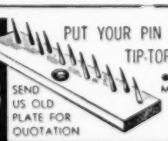

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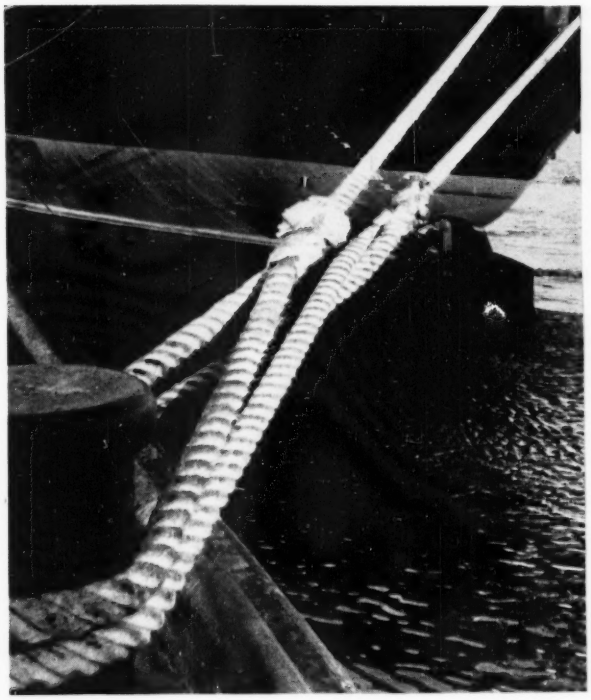

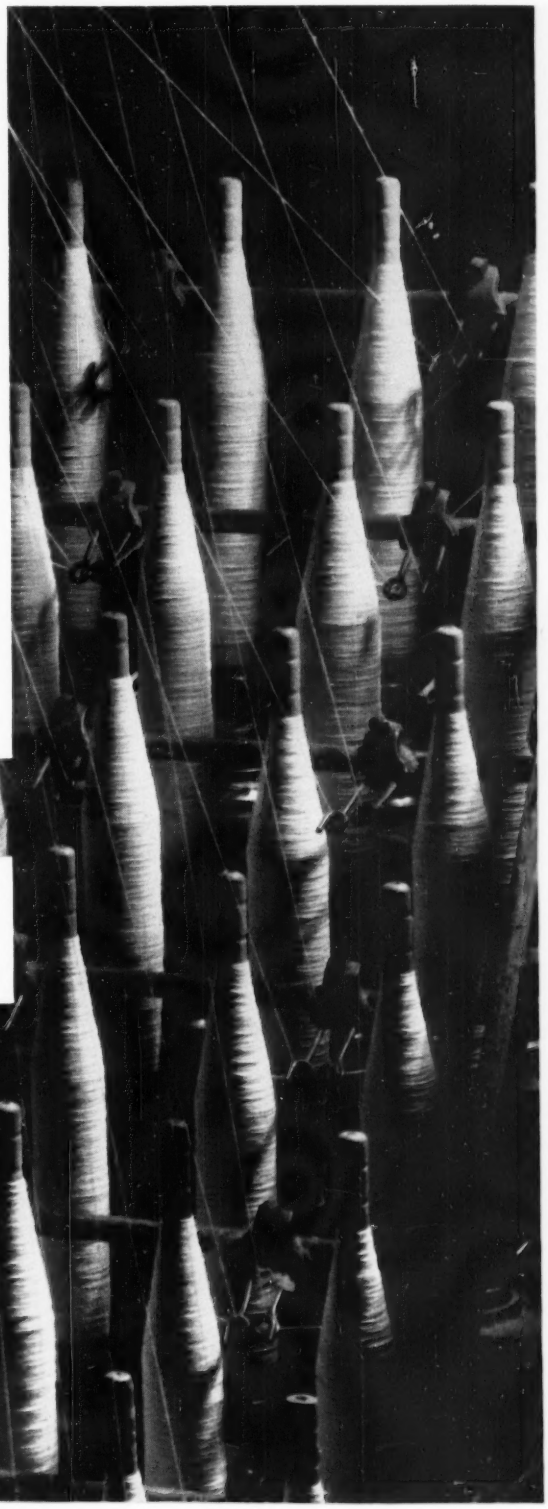

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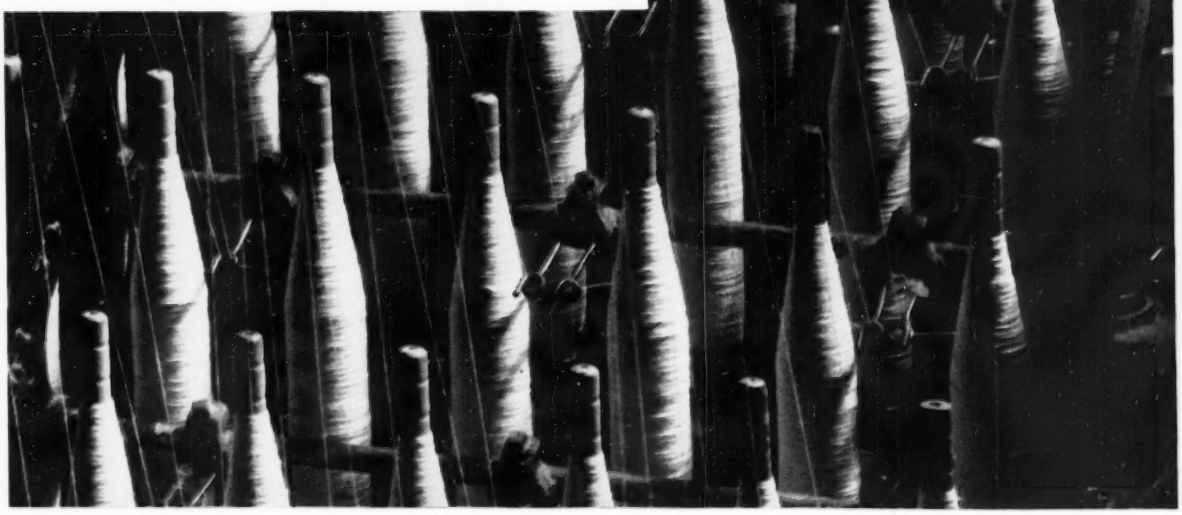

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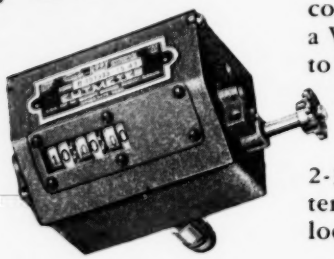

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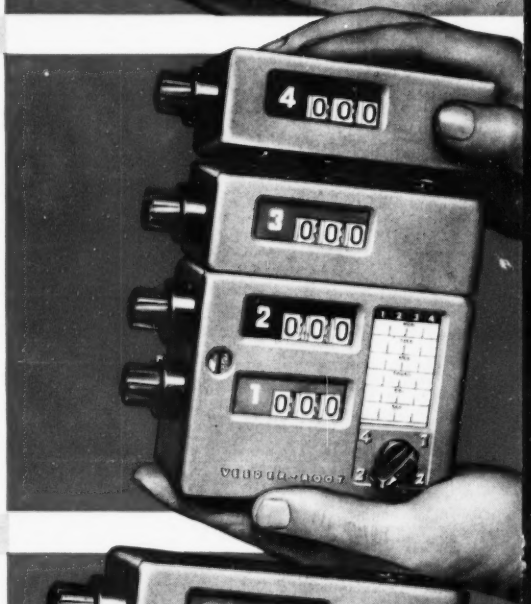

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